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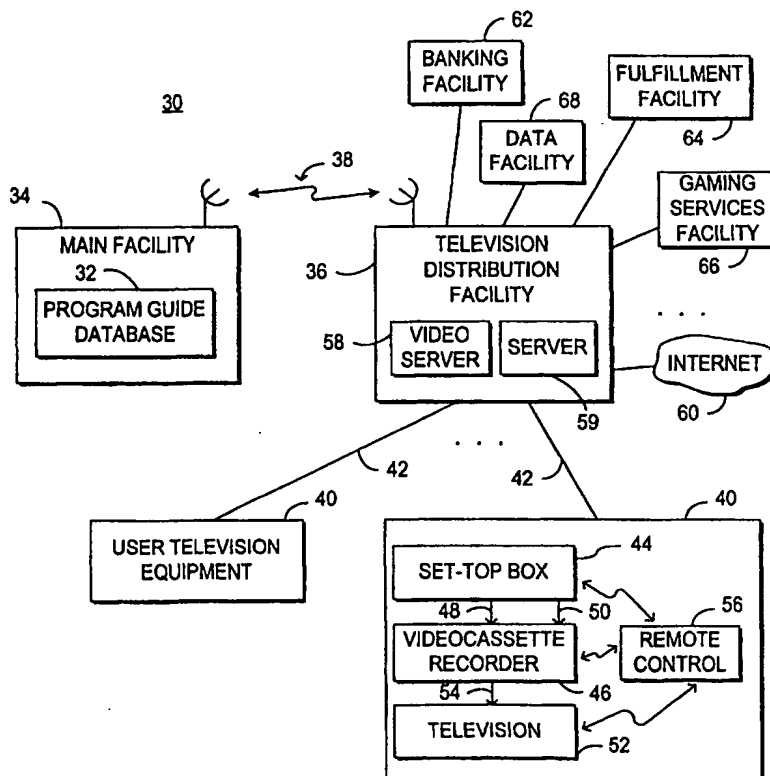
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(54) Title: INTERACTIVE TELEVISION PROGRAM GUIDE SYSTEM THAT SERVES AS A PORTAL

(57) Abstract

A system is provided in which an interactive television program guide application and non-program-guide applications are at least partially implemented on user television equipment. A program guide program application interface is provided that is used to maintain a consistent user interface between the program guide application and the non-program-guide applications. Non-program-guide applications may be launched by the program guide application. The user may select certain non-program-guide applications as favorites and may set parental controls for certain non-program-guide applications. The program guide application may run in the background while a non-program-guide application operates. While the non-program-guide application operates, the program guide may check for events that require immediate attention. When such an event is detected, operation of the non-program-guide application may be suspended and the user may be asked whether the detected event should take place or whether operation of the non-program-guide application should be resumed.



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INTERACTIVE TELEVISION PROGRAM GUIDE SYSTEM
THAT SERVES AS A PORTAL

Background of the Invention

5 This invention relates to interactive television program guide systems. More particularly, this invention relates to interactive television program guide systems having a program guide application that serves as a portal for other applications.

10 Interactive television program guides are well known. Such guides, which are typically implemented on set-top boxes, allow users to view television program listings on their home televisions. Typical program guides allow users to view information
15 for television programs and channels and audio programs and channels. For example, a program guide may provide information on regular television channels, premium television channels, pay-per-view television channels, and music channels. A variety of display formats are
20 typically supported. For example, program listings may

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be organized by time, by channel, and by category (sports, children, comedy, movies, etc.).

Future set-top box systems may include access to services that are rarely or never provided by
5 current program guides, such as video-on-demand, home shopping, Internet web browsing, electronic mail, banking, enhanced television (interactive programs), data services, and wagering services.

In currently envisioned systems each of these
10 non-program-guide services would be provided as a separate application loaded into the same set-top-box as the program guide. A menu structure or other common interface might be provided to allow the user to launch a given one of the applications. However, there would
15 be no commonality between the user interfaces provided by the program guide application and non-program guide applications. This could lead to user confusion, particularly with users who are not necessarily computer literate. Overlap between applications might
20 not be exploited and code and data might be duplicated among the applications.

It is therefore an object of the present invention to provide a program guide system in which an interactive television program guide application has
25 the capability to serve as a portal for other applications. By acting as a portal, the program guide application may ensure a common user interface, may eliminate resource contention, and may reduce the amount of code and data required by each application.

30 It is also an object of the present invention to provide ways in which to facilitate the use of

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multiple applications such as a program guide application and non-program-guide applications.

Summary of the Invention

These and other objects of the invention are accomplished in accordance with the principles of the present invention by providing an interactive television program guide system having an interactive television program guide application that serves as a portal for other applications. The interactive television program guide application and other applications may be implemented on any suitable platform. One suitable platform is user television equipment that is based on a set-top box or that is based on a device that incorporates set-top box functions such as an advanced digital television receiver. Another suitable platform involves a client-server architecture based on a server and user television equipment. The server, which may be located at a cable system headend or other suitable remote location, operates in cooperation with the user television equipment. With such client-server arrangements, interactive program guides and other applications that are implemented on the platform are partially implemented on the user television equipment and partially on the server, rather than being implemented entirely on the set-top box. For example, program guide functions related to displaying menu screens may be implemented at the user television equipment, whereas functions related to maintaining the program guide database or related to video-on-demand features may be implemented on the server.

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An application program interface (API) for the program guide is provided. The application program interface may allow non-program-guide applications to access program guide functions. The API may also
5 coordinate access to platform resources (e.g., set-top box resources and/or server resources) such as on-screen display resources, remote control key resources, set-top box front-panel resources, communications channel resources, memory function resources, etc. by
10 the program guide and the non-program-guide applications. The API may allow non-program-guide applications to make use of program guide functions such as tuning, parental control, favorites, user profiles, drawing, highlighting and on-screen
15 navigation, database access, and purchasing. This approach ensures that a common user interface is used, resource contention is eliminated, and the amount of code and data required by each application is reduced.

The API helps coordinate the use of
20 applications that are located remote from the set-top box, such as applications located on a server at a cable system headend or at a server on the Internet. The API may also perform authentication functions. This helps ensure that only authorized applications are
25 provided with access to desired functions such as certain program guide functions. Different access rights may be given to different applications.

Non-program-guide applications may provide interactive content in the form of an interactive
30 component that is associated with a television programming (e.g., a given television program, a television channel, or the like). For example, a non-

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program-guide application may provide interactive sports content for a sports channel or interactive home shopping content for a home shopping channel. The interactive content may be in the form of a shopping
5 experience, information services, games, or any other type of suitable interactive content associated with a given television channel, service, program, program type, or program listings. A non-program-guide application that provides an interactive component for
10 a given channel may be delivered to a user's set-top box along with video and audio programming. The interactive television program guide application may alert the user to the presence of the interactive component. One suitable indicator is an icon that may
15 be presented as a overlay on top of the current television channel. Another suitable indicator is an icon or other display element that may be provided as part of a program guide display screen.

The interactive television program guide
20 application may be used to launch non-program-guide applications. For example, the program guide application may provide an on-screen option to launch a particular non-program-guide application. The user may also activate a dedicated button such as a "launch"
25 remote control button.

Applications and other interactive content may also be incorporated directly into the program listings displayed by the interactive television program guide application. For example, video-on-
30 demand programming may be made available to the user with a video-on-demand application. The interactive television program guide application may incorporate

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selectable video-on-demand program listings into the program guide display screens provided by the interactive television program guide application. When the user selects a given video-on-demand program
5 listing, the interactive television program guide application may launch the video-on-demand application and direct the video-on-demand application to play the video for the selected listing or to begin the processing necessary to authorize the delivery of that
10 video.

Other interactive content, such as audio-on-demand, data from information services, web pages, shopping information, horse racing or other wagering, and the like may also be handled by integrated
15 selectable buttons provided on certain program guide display screens as overlays on top of television programs, etc. A selectable option that allows a non-program-guide application to be invoked from within the interactive television program guide application and
20 directed to take an action related to a current television program, program listing, service, etc. is called a hot link. A selectable hot link related to a currently displayed television program provides a way to launch a non-program-guide application while
25 directing the launched application to take an action that is related to the current television program. For example, a user may be watching a sports program. Selecting a hot link to a home shopping application launches the home shopping application and directs the
30 home shopping application to present products to the user that are related to sports.

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The user may be allowed to set certain non-program-guide applications as favorites. For example, the interactive television program guide application may display these selected favorite applications in a list when directed by the user, may restrict the movement of a highlight region to just those favorite applications when the user navigates within a larger list of non-program-guide applications, or may otherwise use the information on which applications have been designated as favorites.

The user may also be allowed to set parental controls for certain non-program-guide applications. This allows the user to lock applications such as shopping or video-on-demand. A viewer may unlock such parentally controlled applications by entering a predefined user-selected parental control password or using any other suitable parental control unlocking technique.

The user may also be allowed to set reminders for the content associated with various applications. For example, the user may be allowed to set reminders for specialized promotional segments associated with a home shopping application or the like. Reminders may also be set for chat sessions.

An application (e.g., the interactive television program guide application) may continue to run in the background while another application (e.g., a non-program-guide application) runs in the foreground. The background application may continually monitor events to determine when events occur that require immediate attention. For example, the interactive television program guide application may

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run in the background to monitor whether the user has pressed a remote control key that requires attention or whether a prescheduled program guide function such as a pre-set reminder requires attention. In situations
5 such as these, the interactive television program guide application may terminate or suspend the operation of a non-program-guide application running in the foreground. If operation of the foreground application is suspended, the background application may display a
10 message for the user asking whether the user wishes to resume the operation of the suspended application or whether the detected event (e.g., the event related to the user key press or prescheduled reminder or the like) should take place.

15 Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

Brief Description of the Drawings

20 FIG. 1 is a diagram of an illustrative interactive television program guide system in accordance with the present invention.

FIG. 2 is a diagram illustrating how the system may have an interactive television program guide
25 application and a plurality of non-program-guide applications in accordance with the present invention.

FIG. 3 is a diagram showing how two applications may have an overlap in features in accordance with the present invention.

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FIG. 4 is a flow chart showing steps involved in changing channels using the program guide in accordance with the present invention.

FIG. 5 is a flow chart of steps involved in
5 using the program guide application program interface to maintain a consistent user interface when invoking non-program-guide applications with the program guide application in accordance with the present invention.

FIG. 6 is an illustrative program guide
10 display screen containing program listings having icons indicating the availability of interactive components associated with the program listings.

FIG. 7 is an illustrative television screen showing how an icon indicating the availability of an
15 interactive component may be displayed as an overlay on top of the video for a particular television channel in accordance with the present invention.

FIG. 8 is a flow chart of illustrative steps involved in indicating to a user that a non-program-
20 guide application is available in accordance with the present invention.

FIG. 9 is a diagram of an illustrative remote control that may be used to control the user television equipment in accordance with the present invention.

FIG. 10 is a diagram showing how an
25 interactive component associated with a program may be launched by pressing a dedicated button in accordance with the present invention.

FIG. 11 is a diagram showing how a user may
30 invoke a non-program-guide application by responding to an on-screen prompt in accordance with the present invention.

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FIG. 12a is a diagram illustrating how the user may obtain additional information on a given program by pressing an information key while tuned to the given program and how the user may launch a non-program-guide application (e.g., a web browser) by pressing a launch button once the information has been displayed in accordance with the present invention.

FIG. 12b is a diagram illustrating how the user may activate and use an overlay containing various program guide options and options for launching non-program guide applications in accordance with the present invention.

FIG. 13 is an illustrative program guide display screen containing program guide listings for a particular category (sports) and containing an on-screen hot link to a web browser application in accordance with the present invention.

FIG. 14 is an illustrative program guide display screen containing program guide listings and menu options for launching various non-program-guide applications in accordance with the present invention.

FIG. 15 is an illustrative program guide display screen containing a grid of program listings in which certain grid cells provide selectable hot links that allow the user to invoke a web browser application and to direct the web browser application to retrieve certain web pages related to the show to which the selectable options are adjacent in the grid in accordance with the present invention.

FIG. 16 is an illustrative program guide display screen containing video-on-demand program listings in accordance with the present invention.

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FIG. 17a is an illustrative program guide display screen containing video-on-demand program listings intermixed with normal program listings in accordance with the present intention.

5 FIG. 17b is an illustrative program guide display screen of a program listings grid containing video-on-demand program listings in accordance with the present invention.

FIG. 18 is an illustrative program guide
10 display screen that contains options with which the user may choose to view program listings for particular categories or themes. Some of the illustrative programming themes in the FIG. 18 display screen relate to video-on-demand programming in accordance with the
15 present invention.

FIG. 19a is an illustrative program guide display screen containing selectable audio-on-demand program listings in accordance with the present invention. If the user selects one of the listings,
20 the interactive television program guide application launches an audio-on-demand application and directs it to play the audio associated with the selected listing in accordance with the present invention.

FIG. 19b is a diagram illustrating the
25 display of a data service such as a stock ticker that may be provided on top of the video for a television program or program listings or the like in accordance with the present invention.

FIG. 20 is a diagram illustrating how web
30 content or the like may be embedded into a program guide display screen in accordance with the present invention.

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FIG. 21a is a diagram showing how the program guide application may display a list of selectable options for available non-program guide applications when the user presses launch in accordance with the present invention.

FIG. 21b is an illustrative diagram showing how a user who is viewing a television program may activate a hot link (by pressing a launch key) that launches a chat application and directs the chat application to initiate a chat session related to the television program in accordance with the present invention.

FIG. 22 is a flow chart of illustrative steps involved in using a hot link for a non-program-guide application in accordance with the present invention.

FIG. 23 is a flow chart of illustrative steps involved in using an electronic mail (e-mail) hot link in accordance with the present invention.

FIG. 24 is a flow chart of steps involved in using a home shopping hot link in accordance with the present invention.

FIG. 25a is an illustrative program guide display screen that provides the user with opportunities to set certain non-program-guide applications as favorites or to set parental controls for certain applications in accordance with the present invention.

FIG. 25b is an illustrative view favorites program guide display screen in accordance with the present invention.

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FIG. 25c is an illustrative video-on-demand purchase authorization screen in accordance with the present invention.

FIG. 25d is an illustrative home shopping application listings screen in accordance with the present invention.

FIG. 26 is a diagram illustrating how the purchasing features of the interactive television program guide application may be shared between the program guide application and one of the non-program guide applications in accordance with the present invention.

FIG. 27 is an illustrative flow chart of steps involved in running an application in the background while another application operates in the foreground in accordance with the present intention.

FIG. 28 is an illustrative series of display screens showing how a program guide reminder overlay may be provided on top of a running non-program guide application such as a web browser to notify the user of an upcoming television program in accordance with the present invention.

FIG. 29a is a program guide display screen for a main menu showing how selectable options may be provided for the non-program-guide applications in accordance with the present invention.

FIG. 29b shows an illustrative program guide setup screen containing selectable options that allow the user to launch non-program guide applications and be taken to associated setup screens within those applications in accordance with the present invention.

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FIG. 30 is a flow chart of steps associated with registering an application with the application program guide interface in accordance with the present invention.

5 FIG. 31 is a flow chart of steps involved in authenticating an application and determining the access rights of an application in accordance with the present invention.

10 FIG. 32 is a diagram illustrating how applications that use the application program guide interface may be based at various locations such as on user television equipment, secondary user television equipment, an Internet server, or a server associated with a television distribution facility in accordance
15 with the present invention.

Detailed Description of the Preferred Embodiments

An illustrative program guide system 30 in accordance with the present invention is shown in FIG. 1. Program guide data such as program listings,
20 program descriptions, pay-per-view ordering information and the like may be stored in program guide database 32 of main facility 34. Main facility 34 distributes the program guide data to multiple television distribution facilities 36 via communications paths such as
25 communications path 38. Television distribution facilities 36 may be broadcast television facilities, cable system headends, satellite distribution facilities, or other suitable television distribution facilities. Only one television distribution facility
30 36 is illustrated in FIG. 1 to avoid over-complicating the drawings. For clarity, the invention will be

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primarily discussed in connection with the use of one such television distribution facility. Communications path 38 may be any suitable communications path, such as a satellite link, cable, fiber-optic link, telephone
5 link, the Internet, etc.

Each television distribution facility 36 has a number of associated users each of which has user television equipment 40 connected to television distribution facility 36 via one of communications
10 paths 42. Communications paths 42 may be any suitable type of link suitable for supporting television programming and data. For example, if television distribution facility 36 is a cable system, communications paths 42 may be cable. Paths 42 are
15 used to distribute television programming to user television equipment 40. The television signals distributed to user television equipment 40 may be analog or digital or both. Paths 42 are also used to distribute data such as program guide data to user
20 television equipment 40. Data may be distributed using an in-band or out-of-band technique and may use digital or analog techniques. Data may be distributed continuously, periodically, or on-demand. Paths 42 are preferably bidirectional, so that functions such as
25 impulse pay-per-view purchases from the program guide and client-server functions may be supported. When services other than program guide services are provided to the user, data may be provided over paths 42 that relates to such non-program-guide services.

30 As shown in FIG. 1, user television equipment 40 may contain a set-top box 44 connected to an optional videocassette recorder 46 or other recording

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device such as a digital video disc (DVD) player with recording capabilities or a digital storage device such as equipment containing a hard disk drive or the like. Set-top box 44 may receive television programming and
5 data from television distribution facility 36 via communications path 42. An interactive television program guide and various non-program-guide applications may be implemented on set-top box 44.

Television programming from television
10 distribution facility 36 and display screens generated by the applications on set-top box 44 may be provided to videocassette recorder 46 using communications path 48, which may be, for example, a cable or wire. Commands may be provided to videocassette recorder 46
15 from set-top box 44 using communications path 50, which may be an infrared link or other suitable communications path.

Videocassette recorder 48 may pass television programming from television distribution facility 36,
20 display screens generated by set-top box 44, or video signals generated by playing a videocassette to television 52 via communications path 54. The user may view television programming and display screens on television 52 and may use television 52 (or an
25 auxiliary audio system) to listen to music channels or other audio programs.

Set-top box 44, videocassette recorder 46, and television 52 may be controlled by remote control 56 or any other suitable user interface such as a
30 mouse, trackball, wireless keyboard, voice recognition system, touchpad, dedicated keys, etc. If desired, other types of user television equipment 40, such as

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those based on personal computer televisions (PC/TVS) or advanced television receivers may be used instead of a configuration based on a set-top box. However, for clarity the present invention will be described

5 primarily in connection with a set-top box arrangement. Moreover, different configurations may be used for distributing data to user television equipment 40 such as configurations in which program listings and other information may be distributed to user television

10 equipment 40 without passing through television distribution facility 36 using paths that are separate from communications paths 42. For clarity, the present invention will be described primarily in connection with the illustrative data distribution arrangement

15 shown in FIG. 1.

Television distribution facility 36 may contain a video server 58 to support video-on-demand applications. With such applications, videos that are stored on video server 58 may be requested by users at

20 user television equipment 40. The videos may then be played back to the users over communications paths 42. A server 59 that is separate from or integrated with server 58 may also be provided if it is desired to implement applications such as the program guide

25 application using a client-server architecture.

Applications such as program guide applications and non-program-guide applications may be implemented on any suitable platform. One suitable platform is user television equipment 40, which may be

30 based on a set-top box or a device that incorporates set-top box functions such as an advanced digital television receiver, etc. Another suitable platform

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involves a client-server architecture based on a server 59 and user television equipment 40. Server 59 may be located at television distribution facility 36 or at another location remote from user television equipment 40. Server 59 operates in cooperation with user television equipment 40. In client-server arrangements, program guide data may be maintained in a database on server 59 and may be delivered to user television equipment 40 on demand. The program guide data maintained at server 59 may be distributed to server 59 for its database from program guide database 32 via communications link 38.

With client-server arrangements, interactive program guides and other applications that are implemented on the platform are partially implemented on user television equipment 40 and are partially implemented on server 59, rather than being implemented entirely on user television equipment 40. For example, program guide functions related to displaying menu screens may be implemented at user television equipment 40, whereas functions related to maintaining a program guide database at television distribution facility 36 may be implemented using server 59 and functions related to video-on-demand features may be implemented using server 58.

Web browser applications on set-top box 44 may allow the user to access the Internet 60. The Internet 60 may be either accessed directly (e.g., via a modem link) or via television distribution facility 36 (using, e.g., a cable modem link), as shown in FIG. 1. Other facilities and services that may be accessed directly or via television distribution facility 36

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include banking services (using banking facility 62),
shopping services (using fulfillment facility 64),
wagering or gaming services (using gaming facility 66),
and information and other services (using data facility
5 68).

As shown in FIG. 2, the program guide
application 70 may have an associated program guide
application program interface (API) 72, that allows
program guide application 70 to serve as a portal for
10 non-program-guide applications such as audio-on-demand
application 74, video-on-demand application 76, home
banking application 78, home shopping application 80,
enhanced television application 82, Internet web
browser application 84, data services application 86,
15 electronic mail application 88, and gaming services
application 90. A program guide system in which a
program guide API is used is described in Ellis et al.
U.S. patent application Serial No. 09/145,232, which is
hereby incorporated by reference herein in its
20 entirety. Although depicted as being a part of program
guide application 70 for purposes of illustration,
program guide API 72 may be considered to be either a
part of program guide application 70 or separate from
application 70 yet associated with application 70.
25 Program guide API 72 may be implemented partially on
user television equipment 40 and partially on a server
such as server 59 or may be implemented on user
television equipment 40. For clarity, the functions of
program guide API 72 will be described primarily in the
30 context of arrangements in which program guide API 72
is implemented on user television equipment 40.

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Moreover, although API 72 is primarily described herein as being associated with program guide application 70, the principles of the present invention also apply to systems in which application program
5 interfaces are associated with other applications. For specificity and clarity the present invention is described primarily in the context of a program guide API. This is, however, merely illustrative.

In accordance with the present invention, use
10 of program guide API 72 helps ensure that all access to applications other than the program guide application is made through the program guide. This assures that there is essentially only one user interface for the user to master. The user need not attempt to learn
15 multiple user navigation paradigms or become familiar with dissimilar data presentation formats. The user need only become familiar with a single user interface.

Program guide API 72 has functions that allow the non-program-guide applications to access platform
20 resources 92 such as on-screen display features (colors, fonts, etc.), remote control keys (key assignments and the like), front panel resources (which determine, e.g., the functions assigned to various dedicated buttons on user television equipment 40),
25 communications channel resources (e.g., features related to how set-top box 22 sends and receives data), and server resources.

Program guide API 72 also has functions that allow applications to make use of program guide
30 resources 94 such as tuning (how to change set-top box channels), parental control (features related to placing a password lock on certain channels or

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programs), favorites (e.g., user-designated favorite channels), user profiles (e.g., favorites and settings profiles for various users of a program guide on a given set-top box), drawing functions, highlighting and
5 on-screen navigation, database access (e.g., to a database of program guide information stored in memory in set-top box 44 and periodically or continually supplied with program guide data from program guide database 32 of main facility 34), purchasing functions
10 (e.g., for impulse ordering pay-per-view events), options on program guide display screens, etc.

Because the functions of program guide API 72 help coordinate access of non-program guide applications to platform resources 92 and program guide
15 resources 94, resource contention may be eliminated and the amount of code and data required by each application may be reduced. A common user interface across applications may also be assured. As shown in FIG. 3, non-program guide application No. 1 and non-
20 program guide application No. 2 may have an overlap in features 96. The shared code and data represented by overlap 96 are typically resident in memory in set-top box 44. Overlap 96 represents a savings in the overhead associated with implementing these features on
25 set-top box 44.

One example of using program guide application 70 to perform certain non-program-guide application functions involves the function of changing the channel to which set-top box 44 is tuned. Steps
30 involved in this process are illustrated in FIG. 4. At step 98, the user is provided with an opportunity to request a channel change by one of the non-program-

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guide applications. The non-program guide application may also initiate a channel change (e.g., to direct a tuner to tune to an appropriate channel to collect data). After the user requests a channel change or the
5 non-program-guide application initiates a channel change, program guide application 70 is used to change channels at step 100. As program guide application 70 changes the channel, it ensures that program guide features such as parental control, favorite channels,
10 and authorization and purchasing features are consistently applied. This helps to ensure that a consistent user interface is maintained, because each of these features may operate nearly identically in each of the non-program-guide applications and in
15 program guide application 70.

The program guide system of the present invention maintains a consistent user interface using program guide application 70 to perform certain non-program-guide application functions. Steps involved in
20 maintaining a consistent user interface are shown in FIG. 5. At step 102, program guide application 70 provides access to non-program-guide applications. After a user launches a non-program guide application or a non-program guide application is otherwise
25 invoked, program guide application 70 maintains a consistent user interface during operation of program guide application 70 and any non-program guide applications at step 104.

As shown in FIG. 5, the task of maintaining a
30 consistent user interface at step 104 partly involves coordinating access to platform resources at substep 106 and partly involves providing non-program guide

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applications with access to program guide resources at substep 108. An example of step 108 is when the user needs to change channels on set-top box 44 using a non-program guide application. The program guide

5 application coordinates access to the program guide tuning function, which ensures that parental control, favorite channels, and authorization and purchasing functions are consistent for all non-program-guide applications.

10 Another aspect of the task of maintaining a consistent user interface is the step of using program guide application 70 to ensure that all significant access of the user to non-program-guide applications is made through program guide application 70 (step 110).

15 Step 110 may involve, for example, the step of only allowing access to those non-program-guide applications that use program guide resources to a significant extent or at least have operating characteristics equivalent to those normally provided by program guide
20 application 70. Step 110 may also involve the task of providing certain functions in program guide application 70 that might nominally be provided in a non-program-guide application.

A typical non-program-guide application might
25 be a shopping application. The shopping application might need to display lists of available products. Step 108 would then involve using a program guide graphics routine that is adept at drawing boxes, tables, and the like for the program guide application
30 to display the list of available products for the shopping application. Because the program guide graphics routine is the same as that used by the

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program guide application, the user may be presented with a consistent user display interface (i.e., the lists of products in the shopping application program look much the same as the lists of listings in the
5 program guide).

To avoid use of non-program-guide applications with inconsistent user interfaces, step 110 may involve configuring or using program guide application 70 to ensure that non-program-guide
10 applications with such inconsistent user interfaces may not be readily accessed by the user.

The integration of non-program-guide application features into the program guide application to provide the user with a consistent user interface
15 may be accomplished in a number of ways. For example, icons may be provided on certain program guide display screens that allow the user to launch non-program guide applications from deep within the program guide. Non-program guide applications may also be integrated
20 directly into the program guide. Other program guide features that promote consistency of the user interface may include providing hot links to non-program guide applications from within the program guide application. These and other features that promote consistency and
25 create the impression that the user is using one integrated system rather than a collection of disparate applications are described in more detail below.

Some non-program-guide applications may be used to provide an interactive component associated
30 with programming on an otherwise passive audio or video channel. Interactive non-program-guide applications of this type may be delivered to set-top box 44 along with

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the audio and video programming being distributed by television distribution facility 36. Program guide application 70 may provide indicators such as icons on certain program guide display screens (whether full
5 screen display screens or partial screen overlay display screens) to indicate that the interactive component is available. For example, icons 112 may be provided adjacent to certain program listings 114 on program guide display screen 116 within program guide
10 application 70, as shown in FIG. 6. Program guide display screen 116 is a program listings screen, but any suitable program guide display screen may be provided with icons 112 or any other suitable indicators of interactive content.

15 If desired, an indicator may be displayed as an overlay on a program by itself, as illustrated by icon 118 of FIG. 7, which is displayed as an overlay on top of shopping channel 120 to indicate that the shopping channel has an interactive component
20 available.

Indicators such as those of FIGS. 6 and 7 may alert the user to the type of interactive content that is available. For example, if the interactive content relates to purchasing a product, the indicator may be
25 an icon of money or a cash register. If the interactive content relates to viewing a web site, the indicator may be a icon representative of the Internet. These indicators are merely illustrative. Any suitable indicator or icon may be provided to indicate the
30 presence of interactive content if desired.

Indicators or other information about which programs have interactive components may be distributed

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to the program guide application as part of the television programs with which the interactive components are associated. For example, information on an interactive component associated with a given
5 program may be provided on a sideband of the channel that carries the program or, in digital system, may be provided as part of a digital stream that includes the program. Alternatively, indicators may be distributed to the program guide application as part of a data
10 stream (e.g., the stream of program guide data provided to set-top box 44 from main facility 34 via television distribution facility 36.) If desired, the indicator may be incorporated into the program guide application prior to loading the application onto set-top box 44.

15 FIG. 8 shows steps involved in using an indicator in the program guide application to indicate to the user that there is interactive content available to the user. The various distribution techniques that may be used to provide the indicator to the program
20 guide are shown at step 122. After the indicator has been provided to the program guide in step 122, the program guide application displays the indicator on a program guide display screen such as a television program listings screen, on another suitable display
25 screen generated by program guide application 70, or directly on top of a television program as an overlay at step 124. The program guide also provides the user with an opportunity to launch the application associated with the indicator at step 124.

30 The program guide application may allow the user to launch the interactive component by pressing a key on remote control 56 (FIG. 1). For example, remote

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control 56 may have a dedicated "launch" key 128 as shown in FIG. 9 that causes the program guide application to launch any interactive component associated with the current program when pressed by the user. If there is an indicator (e.g., an icon) associated with a given program or listing when the user presses launch, the program guide invokes the interactive component associated with that indicator. If there is an interactive component associated with a given program or listing, but no icon or other indicator present, the program guide may still invoke the interactive component associated with the given program or listing. For example, as shown in FIG. 10, when the user is viewing video for a program 160, the user may press launch key 128 to direct the program guide to display the interactive component or components that are associated with the video for the program (shown as interactive component(s) 162).

Alternatively, when the user tunes to a given program, the program guide may present an on-screen option to launch the interactive component (along with any available information about that component). This is shown in FIG. 11. In the example of FIG. 11, the user tunes to the shopping channel 164, which causes the program guide to display text box 166 instructing the user to press launch to invoke the home shopping application. If the user presses launch, the program guide launches the home shopping application. As shown on the lower display screen in FIG. 11, the home shopping application may display a home shopping overlay 168 on top of the current channel 164. Overlay 168 may contain a description of a product that is

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being promoted on shopping channel 164 and a highlight 170 that may be positioned by the user to select from various options. The illustrative options shown in overlay 168 include purchase option 172, which allows the user to initiate a sequence of purchase screens, and information option 174, which allows the user to request additional information (either electronic or printed) for merchandise such as the product currently being promoted on shopping channel 164.

- 10 If desired, information indicating that an interactive component is available may be presented to the user after the user requests information on a program or listing. For example, as shown in FIG. 12a, if the user is watching a television program on channel 7, the user may press a remote control info key to obtain more information. When the program guide senses that the info key has been pressed, the program guide may display information for the current program in, for example, an overlay such as information window 138.
- 15 The program guide also provides an on-screen option to launch an interactive component that is associated with the current program such as on-screen option 140. In the example of FIG. 12a, the interactive content associated with the current channel is provided by a web browser application. When the user presses launch, the program guide launches the web browser application and directs the web browser to retrieve a web page 142. The web page may be associated with the current program (i.e., the program that was being displayed on channel 7 when the user pressed the info key.)

 The user may also launch an interactive component using a overlay window or other on-screen

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option region as shown in FIG. 12b. Initially, the user may be watching a particular television program on television display 143. The user may press an OK key on a remote control or other suitable remote control
5 button or may use any other suitable technique to activate an option region 145. Option region 145 may contain options 147 for performing program guide functions such as setting reminders and setting parental controls. Option region 145 may also contain
10 options such as options 149 and 151 for launching interactive components. If the user highlights and selects an option, the associated interactive component may be launched and directed to perform a function associated with the current television program. For
15 example, if the user selects launch web browser option 149, the web browser may be launched and directed to retrieve a web page 153 associated with the current program.

If desired, the user may launch an e-mail
20 application in this way by selecting launch e-mail option 151. The e-mail application can be launched with a preloaded address that is associated with the current program. Further features of an illustrative e-mail messaging system are described in McKissick et
25 al. U.S. patent application Serial No. _____, filed concurrently herewith (Attorney Docket No. UV-128), which is hereby incorporated by reference herein in its entirety.

A user may launch an application from an
30 information screen associated with a program or channel or the like. Systems that allow a user to launch applications from information screens are described in

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Rudnick et al. U.S. patent application Serial No. _____, filed concurrently herewith (Attorney Docket No. UV-113), which is hereby incorporated by reference herein in its entirety.

5 An indicator or icon or a message such as "if you have interactive television you may press your launch button" may be displayed by the program guide when desired to inform the user that interactive components are available. When there is a single
10 indicator such as an icon overlaid on top of a given program, the program guide launches the non-program-guide application associated with that icon when the user presses launch. When there are several icons displayed on a given screen such as in the arrangement
15 of FIG. 6, the user may first select a given program listing (e.g., using a highlight region such as highlight region 115 in FIG. 6 or other suitable arrangement). If a highlight region is used, arrow keys 130 (FIG. 9) may be used to move the highlight
20 region to the desired program listing before the user presses the launch key. An "OK" key 132 (FIG. 9) may be used to perform typical program guide functions such as selecting a listing when it is desired to tune to the program for that listing. Pressing launch button
25 128 (FIG. 9) after a program listing has been highlighted or otherwise selected causes the program guide to launch the non-program-application that is associated with the icon or other indicator for the listing. The step of launching the non-program-guide
30 application is shown as step 126 in FIG. 8.

Non-program-guide applications and other interactive content may be incorporated directly into

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the program listings provided by the program guide application. As shown in FIG. 13, for example, when the program guide is displaying sports program listings on a display screen such as sports listings display screen 176, the program guide may display an option such as option 178 on display screen 176 that allows the user to launch a web browser application to view various sports-related web pages. In the FIG. 13 example, both the program listings and the option to
5 invoke the non-program-guide application are related to a specific type of content (sports).
10

Another example is shown in FIG. 14. In this example the program guide displays a program guide display screen 180 containing various movie program listings 182. Options 184 and 186 to launch non-program-guide applications are embedded directly in movie program listings 182. The user may select one of options 184 and 186 to launch an application or may select one of program listings 182 to tune to the
15 channel associated with that listing by positioning highlight region 188 or another suitable indicator on top of the desired entry using arrow keys 130 and by pressing OK key 132. Integrating options to launch non-program-guide applications directly into the
20 program listings provided by the program guide application helps create a seamless user interface and encourages users to use the non-program-guide applications.
25

Another approach for integrating options to launch non-program-guide applications with program listings is shown in FIG. 15. In the FIG. 15 example, the program guide displays options 190 and 192 for
30

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invoking a non-program guide application (i.e., a web browser application) immediately adjacent to the titles 194 and 196, respectively, of related program listings.

Many video-on-demand functions may be

- 5 provided by a video-on-demand application that is substantially separate from the program guide such as video-on-demand application 76 in FIG. 2. In order for the user to have ready access to video-on-demand programming from within the program guide it is
- 10 necessary to provide access to video-on-demand programs from within program guide program listings screens and other program guide display screens provided by the program guide. An illustrative program guide display screen 198 that contains video-on-demand program
- 15 listings 200 is shown in FIG. 16. The user may select a given one of the displayed program listings 200 using a suitable indicator such as highlight region 202. Selecting a given video-on-demand program listing causes the program guide to launch video-on-demand
- 20 application 76 (FIG. 2) and to direct video-on-demand application 76 to retrieve and play the video-on-demand program associated with the selected program listing for the user. The videos being played for the user may be distributed to user television equipment 40 from
- 25 server 58 using any suitable technique.

The program listings data needed by the program guide to display video-on-demand program listings may be provided to the program guide application from program guide database 32 (FIG. 1) or

30 from video-on-demand application 76 (implemented using video server 58). In the example of FIG. 16, program guide display screen 198 is dedicated to video-on-

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demand listings. If desired, video-on-demand program listings may be integrated into program guide display screens that contain both video-on-demand program listings and program listings other than video-on-demand program listings, as shown in FIG. 17a. Program guide display screen 204 contains program listings for program listings 206 and 208 that are on non-video-on-demand channels. Program guide display screen 204 also contains program listing 210 for a video-on-demand program. The user may scroll up and down through the program listings of screen 204 as indicated by arrows 212. The user may select a given program listing using an indicator such as highlight region 214. When the user presses OK key 132 (FIG. 9), the program guide launches video-on-demand application 76 (FIG. 2) and directs video-on-demand application 76 to provide the movie (Terminator 2 in the example of FIG. 17a) for the selected video-on-demand listing.

Another suitable format in which video-on-demand listings may be incorporated into a program guide display screen displayed by the interactive television program guide application involves a two-dimensional list or grid (hereinafter collectively referred to as a grid) of program listings, as shown in FIG. 17b. In the example of FIG. 17b, programs 3 and 4 are video-on-demand programs and may be ordered, for example, by positioning a highlight region on top of the desired selection and pressing a remote control "OK" button.

Program guide display screen 204 of FIG. 17a contains program listings in the "movies" category. Category-specific display screens such as screen 204

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may be requested from a program guide menu such as select themes menu 216 of FIG. 18. The user may select a desired theme using highlight region 218. As shown in FIG. 8, some of the themes may include video-on-

5 demand content. For example, selecting video-on-demand option 220 directs the program guide to display a program guide display screen such as display screen 198 of FIG. 16. Selecting comedy video-on-demand option 222 from menu 216 directs program guide application 70

10 to display a similar display screen, but only containing video-on-demand program listings related to comedy. Similarly, selecting movies video-on-demand option 224 directs the program guide to display video-on-demand program listings related to movies. If

15 desired, theme-specific video-on-demand options may be incorporated in other program guide display screens such as display screens used for selecting various program category sort options. Video-on-demand program listings may be incorporated on any suitable program

20 guide display screen, including program listings grids, time and channel based listings screens, and flip and browse displays. Various arrangements for incorporating video-on-demand program listings into such displays are described in Ellis U.S. patent

25 application Serial No. 09/262,870, filed March 4, 1999, which is hereby incorporated by reference herein in its entirety.

Other interactive content may be handled similarly to video-on-demand content. As shown in FIG.

30 19a, audio-on-demand listings 226 (e.g., karaoke listings) may be displayed on program guide display screen 228 by program guide application 70. Selecting

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a given audio-on-demand program listing directs program guide application 70 to launch audio-on-demand application 74 (FIG. 2) and directs the audio-on-demand application to play the audio track for the selected
5 listing. As shown in FIG. 19b, data services may be treated similarly. In the example of FIG. 19b, stock ticker 230 may be displayed by the program guide as an overlay on top of screen 232, which may contain video for a television program, program listings, or other
10 suitable program guide display screen content.

Content from a non-program-guide application may be embedded into a display screen generated by another non-program-guide application or may be embedded into a program guide display screen. For
15 example, web content may be embedded into a program guide display screen provided by the program guide, as shown in FIG. 20. In the example of FIG. 20, the program guide has displayed program guide display screen 380. Program guide display screen 380 contains
20 program listings 382. The user may position highlight region 384 using remote control arrow keys. When the user has highlighted a desired program listing, the user may press an OK key on the remote control, which causes web content supplied by an Internet application
25 (e.g., a web browser) to be displayed in window 386.

The arrangement of FIG. 20 is illustrative. If desired, other program guide display screens may be provided with embedded content from non-program-guide applications. For example, such content may be
30 embedded in a menu screen, settings screen, parental control screen, set reminders screen, pay-per-view ordering screen, program listings screens such as by

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time, by channel, and by genre listings screens, etc. Moreover, content from one non-program-guide application (such as an Internet browser application) may be embedded into the display screen of another non-
5 program-guide application (such as the display screen of a home shopping application).

The program guide may also incorporate listings with related web content in the program guide display screens. Selecting such a program listing from
10 a display screen may direct program guide application 70 to launch Internet web browser application 84 (FIG. 2) and may direct Web browser application 84 to retrieve the related web content. Content related to other applications such as shopping application 80
15 (FIG. 2), gaming services application 90, etc. may be handled in a similar manner.

As shown in FIG. 21a, if there are several interactive components associated with a given program, the program guide may display these in the form of pop-
20 up menus or other suitable displays when the user presses launch. In the example of FIG. 21a, when the user presses launch, the program guide displays pop-up menu 144. Pop-up menu 144 contains a highlight region 146 that may be positioned on any of the entries in
25 pop-up menu 144 by the user (by using remote control 56). The program guide will launch the corresponding application once the user makes a selection from pop-up menu 144.

When non-program guide applications are
30 launched, using pop-up menu 144 or any other suitable launching arrangement, it may be desired for the program guide to direct the invoked non-program-guide

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application to take an action related to certain content in the program guide or related to the state of set-top box 44. For example, it may be desired to direct an invoked non-program-guide application to take
5 some action based on which television program is currently being displayed by set-top box 44 or based on which program listing or menu item is highlighted within the program guide. This type of interconnection between the program guide and the non-program-guide
10 application may be accomplished using hot links.

Hot linking involves invoking a non-program-guide application with information for use by the application such as a web site address, e-mail address, program title, or other information that has been
15 preselected based on the current content of the program guide or status of set-top box 44. For example, a user may be watching a program, viewing a program listing, viewing the description of a program, etc. or taking other action within the program guide related to a
20 given program, program listing, program description, type of program (e.g., comedy, sports, etc.), channel, channel listing, channel description, type of channel (e.g., sports, comedy, weather, pay-per-view, premium, etc.), programming package, package listing, package
25 description, package type (time block package, premium services package, comedy, movies, etc.) or the like. If the user activates the hot link, an associated non-program-guide application may be launched and directed to take an action related to the content of the program
30 guide (i.e., an action related to the program, listing, description, etc. that the user is viewing). Examples of the different states of the set-top box that may

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influence what type of action is taken during hot linking include whether the modem is or is not in use, whether the keyboard is enabled or not, whether memory is available or not, etc. If the non-program guide application requires the use of the modem, the non-program-guide application may not be launched unless the modem is not in use. If the non-program-guide application requires the use of a keyboard (e.g., for e-mail or chat), the non-program-guide application may not be launched unless the keyboard has been enabled. If the non-program-guide application requires certain memory resources, that application may only be launched if there is sufficient memory available.

Hot links may be activated by dedicated buttons, the launch button, menu options, or any other suitable technique. For example, remote control 56 may be provided with a dedicated web browser button such as Internet button 154, a dedicated e-mail button 156, a dedicated shopping button 158 and similar buttons associated with other non-program-guide applications, as shown in FIG. 9. When the user presses Internet button 154 while watching a given television program, the program guide launches the web browser and may direct the web browser to retrieve a web page related to the program or current channel. When the user presses e-mail button 156, the program guide launches the e-mail program and directs the e-mail program to set up an e-mail message to a character in the program, a fan club, or other message recipient associated with the program or channel. When the user presses shopping channel button 158, the program guide launches a shopping application and directs the program guide to

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preselect merchandise related to the program or channel.

The example of FIG. 21a illustrates the use of hot links. If the viewer selects web browser option 5 148, the program guide may launch a web browser application and may direct the web browser to locate a web page related to the current program being displayed. The address of the web page may be incorporated into a database maintained by the program 10 guide on set-top box 44, may be transmitted to the program guide with the program itself, or may be provided to the program guide by any other suitable technique. If the user selects option 150, the program guide may launch e-mail application 150 and may direct 15 the e-mail application to initiate a message to, for example, a particular cast member of the current program or to the fan club for the current program. If the user selects option 152, the program guide may launch a home shopping application and may direct the 20 home shopping application to preselect or present merchandise that is related to the current program or channel.

Another example is shown in FIG. 21b. As shown in the upper portion of FIG. 21b, the user may 25 initially be watching television program 390. A message 392 may be displayed indicating the availability of a hot link to a chat session related to the current television program. When the user presses launch or otherwise invokes a chat application, the 30 chat application may display a chat session related to the current television program in display region 394. The video for the current television program may be

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displayed in window 396. A chat application may be linked to a program, a program listing for a program, a description of a program, a type of program, a channel, a channel listing, a description of a channel, a type
5 of channel, etc.

Steps involved in using illustrative hot link arrangements are shown in FIGS. 22-24. FIG. 22 illustrates how a hot link to an application (e.g., a web browser, chat application, etc.) may be provided.
10 Initially, the user is watching a television program or viewing a listing or a description for a program or channel. The program guide may then provide the user with an opportunity to launch the application (e.g., the web browser, chat application, etc.) at step 234.
15 If the user opts to launch the application, the program guide may launch the application at step 236 while directing the program guide to perform a function related to the current program, program listing for a given program, program description for a given program,
20 type of program, channel, channel listing, channel description, or type of channel, etc. For example, if the application is a web browser, the web browser may be directed to retrieve a web page related to the program that the user was watching or the program for
25 which the user was viewing a listing or description. The program guide application may direct the web browser to retrieve a particular web page by providing the web browser with a web address that was incorporated into the database of the program guide
30 application, was transmitted with the program, or was otherwise provided. If the application is a chat application, the program guide application may direct

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the chat application to initiate a chat session on the current program or channel, a chat session related to the selected program listing or channel listing, or a chat session related to the selected description. At
5 step 238, the application performs a function related to the program, channel, program listing, channel listings, program description, or channel description, etc. For example, if the application is a browser, the browser may retrieve web pages related to the program.
10 If the application is a chat application, the chat application may initiate a chat session on the current program.

FIG. 23 illustrates how a hot link to an e-mail messaging feature may be provided. Initially, the
15 user is watching a television program or viewing a listing or a description for a program. The program guide may then provide the user with an opportunity to launch an e-mail application at step 240. If the user opts to launch the e-mail application, the program
20 guide may launch the e-mail application at step 242. At step 244, the user may be provided with an opportunity to send an e-mail message to a cast member, fan club, or other recipient related to the program that the user was watching or for which the user was
25 viewing a listing or description. Further features of an illustrative television e-mail messaging system are described in the above-mentioned McKissick et al. U.S. patent application Serial No. _____, filed concurrently herewith (Attorney Docket No. UV-128). A
30 user may similarly be provided with an opportunity to join a chat group related to the current program. Further features of an illustrative television chat

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system are described in DeWeese et al. U.S. patent application Serial No. _____, filed concurrently herewith (Attorney Docket No. UV-101), which is hereby incorporated by reference herein in its entirety.

5 FIG. 24 illustrates how a hot link to a home shopping feature may be provided. Initially, the user is watching a television program or viewing a listing or a description for a program. The program guide may then provide the user with an opportunity to launch a
10 home shopping application at step 246. If the user opts to launch the home shopping application, the program guide may launch the home shopping application at step 248. At step 250, the program guide may automatically select a product or products available
15 with the home shopping application that are related to the program that the user was watching or for which the user was viewing a listing or description. For example, the program guide may display graphic images of the available products on the user's display screen.
20 In this way, the program guide may present products related to the program that the user was watching.

As shown in FIG. 25a, the program guide application may provide the user with opportunities to set certain applications as favorites. For example,
25 the user may position highlight region 252 or other suitable indicator on top of one of applications 254 and press "fav" key 256 (FIG. 9) or otherwise indicate selection of the highlighted entry. The program guide may mark those applications that have been selected as
30 favorites with indicators such as favorites indicators 258. In the example of FIG. 25a, video-on-demand, home shopping, and e-mail have been set as favorites.

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Setting certain applications as favorites enhances the ability of the program guide to provide access to these applications. For example, the user may direct the program guide to display a list of the user's favorite applications. Only those applications that have been set as favorites are displayed as shown in FIG. 25b. In addition, when the user turns a "favorites mode" on and is viewing a list of applications, the program guide may control the display of a highlight region or other indicator so that only favorite applications may be highlighted or otherwise brought to the attention of the user. Any favorites display mode suitable for displaying program listings information may generally be used by the program guide to display favorite applications. A favorite application may be deselected as a favorite by highlighting the application and pressing favorite key 256 or using any other suitable deselection technique.

The program guide may lock certain applications using a parental control feature. The user must then provide a previously-selected parental control password (or use an equivalent parental control authorization technique) to unlock any locked applications before the locked applications may be invoked by the program guide or by the user. When an attempt is made to invoke a locked application, the user is provided with an opportunity to enter the password. If the correct password is provided, the locked application may be unlocked and invoked. The user may lock a given application by highlighting the application in a list of applications (e.g., on a program guide display screen such as shown in FIG. 25a)

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and by pressing lock key 260 (FIG. 9) or otherwise selecting the application. In the example of FIG. 25a, the applications video-on-demand and banking have been locked, as indicated by lock icons 262. Favorites
5 indicators 258 and lock icons 262 are merely illustrative. Any suitable indicators may be used to mark which applications are favorites or are locked. As shown in FIG. 25c, when the user attempts to invoke a parentally-controlled application, the program guide
10 provides the user with an opportunity to enter the parental control password.

The user may also set reminders for the content associated with various non-program guide applications. For example, a non-program guide
15 application such as a home shopping application may present the user with a display screen of listings for upcoming events. As shown in FIG. 25d, a home shopping application may present a screen 330 of listings 332 of scheduled upcoming segments. The user may move a
20 highlight region such as highlight region 328 on top of a desired segment and may press a suitable remote control key such as an OK key to select that segment. The home shopping application may then present a prompt asking the user whether the user would like to set a
25 reminder for the selected segment. If the user answers affirmatively, the home shopping application (or the program guide or other suitable system component) may set a reminder for the selected segment. An icon such as reminders icon 336 may be displayed adjacent to the
30 listings for those segments for which reminders have been set. Just before the scheduled broadcast time of this segment, a reminder may be displayed on the user's

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television that reminds the user of the upcoming segment. Schedule information for the home shopping segments may be provided as part of a program listings database or as separate data.

5 If desired, the user may set a reminder for a segment or subject that is not yet scheduled for a particular time. Just before the segment is broadcast, a reminder may be displayed on the user's television that reminds the user of the segment.

10 The content for which the reminder is set is may be content that is provided by the application (e.g., home shopping information displayed by the home shopping application), may be content from one application that is embedded into another application
15 (e.g., a web page embedded into a home shopping application), or may be content that the application assists the user in locating and using (e.g., home shopping video segments).

 Other applications may also have associated
20 content for which reminders may be set. For example, the user may set reminders for particular contests or races (e.g., by selecting a desired contest or race from a screen in which various contests and races are listed by a gaming service application). As another
25 example, the user may also set reminders for certain web events or for web-based or cable-system-based chat sessions.

 Program guide application 70 may allow a non-program-guide application to use the purchase
30 mechanisms (e.g., authorization procedures, etc.) of program guide application 70, including use of a purchase code or password. This allows parents to

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control what children in a household may purchase. As shown in FIG. 26, when such purchase mechanisms are shared between program guide application 70 and video-on-demand application 76 (for example), there is an
5 overlap 264 associated with the shared purchasing features in addition to overlap 266 associated with other shared features between these applications. Features associated with the overlap may include purchasing screen features, purchase code features,
10 credit card order features, shipping address features, billing address features, etc.

FIG. 27 shows steps involved in allowing one application (such as program guide application 70) to run in the background while another application is
15 running in the foreground. At step 268 the background application may check for events that may require immediate attention. For example, the background application may handle data collection tasks, as indicated by data collection input 270. The background
20 application may also handle tasks associated with monitoring user actions, such as pressing a key on remote control 56 (FIG. 9) that the background application is monitoring. When the background application is a program guide application, the keys
25 that are monitored may include keys such as guide key 271, which is used to invoke and exit program guide listings screens provided by the program guide application, as indicated by user key presses input 272. The background application may also monitor user-
30 selected actions. When the background application is a program guide application, such user-selected actions may include program reminders (shown as reminders input

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274), timers (shown as timers input 276), and recordings scheduled to be recorded with the videocassette recorder (shown as VCR recordings scheduled by user input 278).

5 If an event that requires immediate attention is detected corresponding to one of inputs 270, 272, 274, 276, or 278 or other such inputs, the background application may interrupt the foreground application by terminating or suspending the foreground application
10 (or by asking that application to terminate or suspend itself) at step 280. When the foreground application has been suspended, the background application may display a message to the user at step 282 asking whether the detected event should take place or whether
15 operation of the foreground application should be resumed.

 An illustrative example is shown in FIG. 28. In the example of FIG. 28, a web browser application is running in the foreground and a program guide with
20 which program reminders have been set is running in the background. As shown in screen 314, just before the scheduled broadcast time of the program for which the reminder was set, the operation of web browser 316 may be suspended and a reminders display 318 overlaid on
25 top of web browser 316. Reminders display 318 contains information on the programs for which the reminder was set such as the title of the program. If the user decides to watch the program, the user may select tune option 320. Selecting tune option 320 directs the
30 system to terminate operation of web browser 316 and to tune to the channel 322 for the selected program. If the user decides to ignore the reminder, the user may

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select hide reminders option 324. Selecting hide reminders option 324 directs the program guide to hide reminders display 318 and to remain in the background. The foreground application (the web browser) resumes
5 operation as shown in screen 326.

Program guide application 70 may provide options in various program guide menus that allow the user to launch non-program guide applications directly from such menus. An illustrative program guide menu
10 295 is shown in FIG. 29a that contains program listings option 296 for viewing program guide display screens containing program listings (shown as being selected by highlight region 298), video-on-demand option 300 for launching a video-on-demand application, home shopping
15 option 302 for launching a home shopping application, and e-mail option 304 for launching an e-mail application. The non-program-guide applications shown in FIG. 30 are merely illustrative. Any suitable non-program-guide application may be launched from a
20 program guide menu screen if desired.

As shown in FIG. 29b, program guide application 70 may provide a setup menu screen 306. If the user selects option 308, the user is presented with program guide setup options that allow the user to
25 customize various features of the program guide. If the user selects one of options 310, an associated non-program-guide application is launched and is directed to present its setup screen to the user. For example, if the user selects option 310a (e-mail setup), an
30 associated e-mail application is launched and the user is taken to a setup screen 312 within the e-mail application. The setup example of FIG. 29b is merely

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illustrative. If desired, the launched application may be directed to provide any suitable screen or function when it is launched.

An application program interface may provide authentication features to help control access to application resources. Illustrative steps involved in coordinating resource access are shown in FIG. 30. At step 342, an application sends a message to the application program interface requesting that the resources of the application be registered with the application program interface. At step 344, other applications may attempt to access the registered resources. If no authentication is required by the registered application, the requested resources may be shared at step 346.

If desired, requesting applications may need to be authenticated and may need to have their access rights to certain resources checked. As shown in FIG. 31, a requesting application may request access to the resources of another application at step 348. At step 350, the application program interface authenticates the request. This may be done, for example, by checking a password provided by the requesting application against a previously established password or by checking whether the requested application is on a list of approved applications. Step 350 may also involve determining whether the requesting application has sufficient access rights to access the requested resources. If the requesting application passes the tests of step 350, the requesting application may access the desired resources of the other application at step 352.

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The application program interface of the present invention may coordinate the activities of program guide applications and non-program-guide applications that reside at locations other than the user's user television equipment. For example, as shown in FIG. 32, an application such as home shopping application 354 may be located on a server 356 that is connected to user television equipment 358 via the Internet 360 or other such suitable data network or via the Internet 360 and television distribution facility 362.

Applications may also be located on a server 364 or other suitable equipment at the television distribution facility. Because server 364 may have fewer memory size constraints than user television equipment 358, relatively more applications may be provided server 364 than may be provided on a single user television equipment device. For example, two different banking applications may be provided on server 364, giving the user a choice as to which application the user prefers.

Applications may also be located on other user television equipment within the user's home. For example, applications may be located on equipment within the home that is connected to the user's user television equipment with an in-home communications path (e.g., a bus or other path, which may form an in-home network). For example, a program guide application 368 may be provided on secondary user television equipment 370 that is connected to user television equipment 358 by communications path 372. Applications located on equipment within the home may

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also be connected to the user's television equipment with a communications path the leaves the home, such as a communications path involving a remote server or the like. Further features of in-home network arrangements
5 are described in Ellis et al. U.S. patent application Serial No. _____, filed concurrently herewith (Attorney Docket No. UV-73), which is hereby incorporated by reference herein in its entirety.

All of the applications at locations other
10 than user television equipment 358 may interact with and share resources with non-program guide applications such as web browser application 374 and program guide application 376 that are located on user television equipment 358. Application program interface 378 may
15 help to coordinate access to the various resources in the system. This may be accomplished using any suitable communications protocol. For example, applications located remote from user television equipment 358 may send messages to application program
20 interface 378 requesting access to resources and the like using a protocol such as Hypertext Transfer Protocol (HTTP) or an Internet Protocol (IP).

An example of an in-home arrangement in which multiple applications share resources is an arrangement
25 in which a first program guide is implemented on a first user television equipment device and a second program guide is implemented on second user television equipment. The first and second user television equipment devices may be interconnected using any
30 suitable in-home network or communications paths. A user (e.g., a parent) may adjust parental control settings or other program guide settings using the

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first program guide. The adjusted settings are then used by the second program guide. Application program interface 378 (which may be implemented on either the first or second user television equipment device)

- 5 coordinates access of the first and second program guides to the resources in the system.

Another example of an in-home arrangement in which multiple applications share resources is an arrangement in which a program guide is implemented on
10 one user television equipment device and a home shopping application is implemented on another user television equipment device. The user television equipment devices may be interconnected using any suitable in-home network or communications paths.

- 15 Application program interface 378 (which may be implemented on either of the user television equipment devices) coordinates access of the program guide and home shopping application to resources in the system (e.g., program guide resources and resources of the
20 user television equipment devices). For example, application program interface 378 may coordinate access to purchasing resources of the program guide that are used by the home shopping application.

- The foregoing is merely illustrative of the
25 principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

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What is Claimed is:

1. An interactive television program guide system in which an interactive television program guide application is at least partially implemented on user television equipment of a user, comprising:

means for implementing a non-program-guide application that provides an interactive component for television programming;

means for providing a program guide application program interface that allows the interactive television program guide to provide the user with access to the non-program-guide application; and

means for launching the non-program-guide application with the interactive television program guide application when the user desires to access the interactive component.

2. The system defined in claim 1 wherein the means for launching comprises means for displaying an on-screen option on the user television equipment with the interactive television program guide application.

3. The system defined in claim 2 further comprising means for including video-on-demand program listings as part of a program guide display screen displayed on the user television equipment by the interactive television program guide application.

4. The system defined in claim 3 further comprising means for displaying the video-on-demand

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program listings in a list of program listings displayed on the user television program guide equipment by the interactive television program guide application.

5. The system defined in claim 2 wherein the means for displaying the on-screen option further comprises means for using the interactive television program guide application to display a menu option on a program guide display screen.

6. The system defined in claim 2 wherein the means for displaying the on-screen option further comprises means for displaying the on-screen option in a program guide display screen containing program listings devoted to a specific type of content with the interactive television program guide application.

7. The system defined in claim 1 wherein the means for launching further comprises means for launching the non-program-guide application with the interactive television program guide application using a hot link.

8. The system defined in claim 7 wherein the hot link relates to a web browser application, the system comprising:

means for launching the web browser application from the interactive television program guide; and

means for directing the web browser application to access a web page with content related

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to the content of the interactive television program guide.

9. The system defined in claim 7 wherein the hot link relates to an electronic mail application, the system comprising:

means for launching the electronic mail application from the interactive television program guide; and

means for directing the electronic mail application to address electronic mail to an address related to the content of the interactive television program guide.

10. The system defined in claim 7 wherein the hot link relates to a home shopping application, the system comprising:

means for launching the home shopping application from the interactive television program guide; and

means for directing the home shopping application to present products related to the content of the interactive television program guide.

11. The system defined in claim 7 wherein the hot link relates to a chat application, the system comprising:

means for launching the chat application from the interactive television program guide; and

means for directing the chat application to perform functions based on the content of the interactive television program guide.

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12. The system defined in claim 1 wherein the program guide application program interface further comprises means for allowing the user to access the non-program-guide application while maintaining a consistent user interface.

13. The system defined in claim 1 wherein there are a plurality of non-program-guide applications and wherein the program guide application program interface further comprises means for coordinating access to platform resources among the program guide application and the non-program-guide applications.

14. The system defined in claim 1 wherein the interactive television program guide application has a number of program guide resources, wherein there are a plurality of non-program-guide applications and wherein the program guide application program interface further comprises means for providing the non-program-guide applications with access to the program guide resources.

15. The system defined in claim 1 wherein the interactive television program guide is also partially implemented on the server.

16. The system defined in claim 1 wherein the interactive television program guide is implemented only on the user television equipment.

17. The system defined in claim 1 further comprising means for embedding non-program-guide

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application content in a program guide display screen provided by the interactive television program guide.

18. A method for using an interactive television program guide system in which an interactive television program guide application is at least partially implemented on user television equipment of a user, comprising:

implementing a non-program-guide application that provides an interactive component for television programming;

providing a program guide application program interface that allows interactive television program guide to provide the user with access to the non-program-guide application; and

launching the non-program-guide application with the interactive television program guide application when the user desires to access the interactive component.

19. The method defined in claim 18 wherein the launching comprises displaying an on-screen option on the user television equipment with the interactive television program guide application.

20. The method defined in claim 19 further comprising including video-on-demand program listings as part of a program guide display screen displayed on the user television equipment by the interactive television program guide application.

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21. The method defined in claim 20 further comprising displaying the video-on-demand program listings in a list of program listings displayed on the user television program guide equipment by the interactive television program guide application.

22. The method defined in claim 19 wherein the displaying of the on-screen option further comprises using the interactive television program guide application to display a menu option on a program guide display screen.

23. The method defined in claim 19 wherein the displaying of the on-screen option further comprises displaying the on-screen option in a program guide display screen containing program listings devoted to a specific type of content with the interactive television program guide application.

24. The method defined in claim 18 wherein the launching further comprises launching the non-program-guide application with the interactive television program guide application using a hot link.

25. The method defined in claim 24 wherein the hot link relates to a web browser application, the method further comprising:

launching the web browser application from the interactive television program guide; and directing the web browser application to access a web page with content related to the content of the interactive television program guide.

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26. The method defined in claim 24 wherein the hot link relates to an electronic mail application, the method comprising:

launching the electronic mail application from the interactive television program guide; and

directing the electronic mail application to address electronic mail to an address related to the content of the interactive television program guide.

27. The method defined in claim 24 wherein the hot link relates to a home shopping application, the method comprising:

launching the home shopping application from the interactive television program guide; and

directing the home shopping application to present products related to the content of the interactive television program guide.

28. The method defined in claim 24 wherein the hot link relates to a chat application, the method comprising:

launching the chat application from the interactive television program guide; and

directing the chat application to perform functions based on the content of the interactive television program guide.

29. The method defined in claim 18 further comprising using the program guide application program interface to allow the user to access the non-

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program-guide application while maintaining a consistent user interface.

30. The method defined in claim 18 wherein there are a plurality of non-program-guide applications and wherein the method further comprises using the program guide application program interface to coordinate access to platform resources by the program guide application and the non-program-guide applications.

31. The method defined in claim 18 wherein the interactive television program guide application has a number of program guide resources, wherein there are a plurality of non-program-guide applications and wherein the method further comprises using the program guide application program interface to provide the non-program-guide applications with access to the program guide resources.

32. The method defined in claim 18 wherein the interactive television program guide is also partially implemented on the server.

33. The method defined in claim 18 wherein the interactive television program guide is implemented only on the user television equipment.

34. The method defined in claim 18 further comprising embedding non-program-guide application content in a program guide display screen provided by the interactive television program guide.

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35. An interactive television program guide system comprising:

user television equipment on which an interactive television program guide application and a non-program-guide application that provides an interactive component for television programming are at least partially implemented, the interactive television program guide application having a program guide application program interface that allows the interactive television program guide to provide the user with access to the non-program-guide application, wherein the interactive television program guide application launches the non-program-guide application when the user desires to access the interactive component.

36. The system defined in claim 35 wherein the interactive television program guide application displays an on-screen option on the user television equipment for the user to launch the non-program-guide application.

37. The system defined in claim 36 wherein the interactive television program guide application displays a program guide display screen containing video-on-demand program listings.

38. The system defined in claim 37 wherein the interactive television program guide application displays the video-on-demand program listings in a list

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of program listings on the user television program guide equipment.

39. The system defined in claim 36 wherein the interactive television program guide application displays the on-screen option as a menu option on a program guide display screen.

40. The system defined in claim 36 wherein the interactive television program guide application displays the on-screen option in a program guide display screen containing program listings devoted to a specific type of content.

41. The system defined in claim 35 wherein the interactive television program guide application launches the non-program-guide application using a hot link.

42. The system defined in claim 41 wherein:
the hot link relates to a web browser application;

the web browser application is launched from the interactive television program guide; and

the web browser application is directed to access a web page with content related to the content of the interactive television program guide when the web browser application is launched.

43. The system defined in claim 41 wherein:
the hot link relates to an electronic mail application;

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the electronic mail application is launched from the interactive television program guide; and

the electronic mail application is directed to address electronic mail to an address related to the content of the interactive television program guide when the electronic mail application is launched.

44. The system defined in claim 41 wherein:
the hot link relates to a home shopping application;

the home shopping application is launched from the interactive television program guide; and

the home shopping application is directed to present products related to the interactive television program guide when the home shopping application is launched.

45. The system defined in claim 41 wherein:
the hot link relates to a chat application;

the chat application is launched from the interactive television program guide; and

the chat application is directed to perform functions related to the content of the interactive television program guide when the chat application is launched.

46. The system defined in claim 35 wherein the program guide application program interface allows

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the user to access the non-program-guide application while maintaining a consistent user interface.

47. The system defined in claim 35 wherein there are a plurality of non-program-guide applications and wherein the program guide application program interface coordinates access to platform resources among the program guide application and the non-program-guide applications.

48. The system defined in claim 35 wherein the interactive television program guide application has a number of program guide resources, wherein there are a plurality of non-program-guide applications, and wherein the program guide application program interface provides the non-program-guide applications with access to the program guide resources.

49. The system defined in claim 35 wherein the interactive television program guide is also partially implemented on the server.

50. The system defined in claim 35 wherein the interactive television program guide is implemented only on the user television equipment.

51. The system defined in claim 35 wherein the interactive television program guide embeds non-program-guide application content in at least one program guide display screen.

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52. A system having user television equipment, comprising:

means for implementing a plurality of non-program-guide applications; and

means for providing a user at the user television equipment with an opportunity to select certain ones of the non-program-guide applications as favorites.

53. The system defined in claim 52 further comprising:

means for implementing an interactive television program guide application; and

means for providing a program guide application program interface that allows the interactive television program guide to provide the user with access to the non-program-guide applications.

54. The system defined in claim 52 further comprising:

means for implementing an interactive television program guide application that has a number of program guide resources; and

means for providing a program guide application program interface that allows applications to access the program guide resources.

55. The system defined in claim 52 further comprising:

means for providing a plurality of platform resources; and

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means for providing a program guide application program interface that allows applications to access the platform resources.

56. The system defined in claim 52 further comprising means for displaying a list of the certain non-program-guide applications selected by the user in a program guide display screen on the user television equipment.

57. A method for using a system having user television equipment, comprising:

implementing a plurality of non-program-guide applications; and

providing a user at the user television equipment with an opportunity to select certain ones of the non-program-guide applications as favorites.

58. The method defined in claim 57 further comprising:

implementing an interactive television program guide application; and

providing a program guide application program interface that allows the interactive television program guide application to provide the user with access to the non-program-guide applications.

59. The method defined in claim 57 further comprising:

implementing an interactive television program guide application that has a number of program guide resources; and

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providing a program guide application program interface that allows applications to access the program guide resources.

60. The method defined in claim 57 further comprising:

providing a plurality of platform resources; and

providing a program guide application program interface that allows applications to access the platform resources.

61. The method defined in claim 57 further comprising displaying a list of the certain non-program-guide applications selected by the user in a program guide display screen on the user television equipment.

62. A system, comprising:

user television equipment on which a plurality of non-program-guide applications are at least partially implemented, wherein the user television equipment is configured to provide a user with an opportunity to select certain ones of the non-program-guide applications as favorites.

63. The system defined in claim 62 wherein an interactive television program guide is implemented at least partially on the user television equipment, the system further comprising a program guide application program interface that allows the

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interactive television program guide to provide the user with access to the non-program-guide applications.

64. The system defined in claim 62 wherein an interactive television program guide application that has a number of program guide resources is implemented at least partially on the user television equipment, the system further comprising a program guide application program interface that allows applications to access the program guide resources.

65. The system defined in claim 62 further comprising:

a plurality of platform resources; and
a program guide application program interface that allows applications to access the platform resources.

66. The system defined in claim 62 wherein a list of the certain non-program-guide applications selected by the user is displayed in a program guide display screen on the user television equipment.

67. A system having user television equipment, comprising:

means for implementing a plurality of non-program-guide applications; and

means for providing a user at the user television equipment with an opportunity to set parental controls for certain ones of the non-program-guide applications.

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68. The system defined in claim 67 further comprising:

means for implementing an interactive television program guide application; and

means for providing a program guide application program interface that allows the interactive television program guide application to provide the user with access to the non-program-guide applications.

69. The system defined in claim 67 further comprising:

means for implementing an interactive television program guide application that has a number of program guide resources; and

means for providing a program guide application program interface that allows applications to access the program guide resources.

70. The system defined in claim 67 further comprising:

means for providing a plurality of platform resources; and

means for providing a program guide application program interface that allows applications to access the platform resources.

71. The system defined in claim 67 further comprising means for displaying a program guide display screen indicating which non-program-guide applications have been locked by parental controls.

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72. A method for using a system having user television equipment, comprising:

implementing a plurality of non-program-guide applications; and

providing a user at the user television equipment with an opportunity to set parental controls for certain ones of the non-program-guide applications.

73. The method defined in claim 72 further comprising:

implementing an interactive television program guide application; and

providing a program guide application program interface that allows the interactive television program guide application to provide the user with access to the non-program-guide applications.

74. The method defined in claim 72 further comprising:

implementing an interactive television program guide application that has a number of program guide resources; and

providing a program guide application program interface that allows applications to access the program guide resources.

75. The method defined in claim 72 further comprising:

providing a plurality of platform resources; and

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providing a program guide application program interface that allows applications to access the platform resources.

76. The method defined in claim 72 further comprising displaying a program guide display screen indicating which non-program-guide applications have been locked by parental controls.

77. A system comprising user television equipment on which a plurality of non-program-guide applications are at least partially implemented, wherein the user television equipment is configured to provide a user with an opportunity to set parental controls for certain ones of the non-program-guide applications.

78. The system defined in claim 77 wherein an interactive television program guide application is implemented at least partially on the user television equipment, the system further comprising a program guide application program interface that allows the interactive television program guide to provide the user with access to the non-program-guide applications.

79. The system defined in claim 77 wherein an interactive television program guide application that has a number of program guide resources is implemented at least partially on the user television equipment, the system further comprising a program guide application program interface that allows applications to access the program guide resources.

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80. The system defined in claim 77 further comprising:

a plurality of platform resources; and
a program guide application program
interface that allows applications to access the
platform resources.

81. The system defined in claim 77 wherein a
program guide display screen is displayed indicating
which non-program-guide applications have been locked
by parental controls.

82. An interactive television program guide
system having user television equipment of a user,
comprising:

an interactive television program guide
application implemented at least partially on the user
television equipment;

a plurality of non-program-guide
applications implemented at least partially on the user
television equipment, wherein one application from
among the interactive television program guide
application and plurality of non-program-guide
applications operates as a foreground application and
another application from among the interactive
television program guide application and plurality of
non-program-guide applications operates as a background
application;

means for allowing the foreground
application to operate while the background application
operates;

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means for checking for events that require immediate attention by the background application while the foreground application operates;

means for suspending the operation of the foreground application when one of the events that requires immediate attention is detected; and

means for displaying a message on the user television equipment when operation of the foreground application is suspended asking the user whether the detected event should take place or whether operation of the given foreground application should be resumed.

83. The system defined in claim 82 wherein the means for checking for events further comprises means for checking for user activity.

84. The system defined in claim 83 wherein the means for checking for user activity further comprises means for checking for user key presses.

85. The system defined in claim 82 wherein the means for checking for events further comprises means for checking for user-selected actions.

86. The system defined in claim 85 wherein the means for checking for user-selected actions further comprises means for checking for reminders.

87. A method for using an interactive television program guide system having user television equipment of a user:

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implementing an interactive television program guide application at least partially on the user television equipment;

implementing a plurality of non-program-guide applications at least partially on the user television equipment, wherein one application from among the interactive television program guide application and plurality of non-program-guide applications operates as a foreground application and another application from among the interactive television program guide application and plurality of non-program-guide applications operates as a background application;

allowing the foreground application to operate while the background application operates;

checking for events that require immediate attention by the background application while the foreground application operates;

suspending the operation of the foreground application when one of the events that requires immediate attention is detected; and

displaying a message on the user television equipment when operation of the foreground application is suspended asking the user whether the detected event should take place or whether operation of the given foreground application should be resumed.

88. The method defined in claim 87 wherein the checking for events further comprises checking for user activity.

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89. The method defined in claim 88 wherein the checking for user activity comprises checking for user key presses.

90. The method defined in claim 87 wherein the checking for events further comprises checking for user-selected actions.

91. The method defined in claim 90 wherein the checking for user-selected actions further comprises checking for reminders.

92. An interactive television program guide system comprising:

user television equipment on which an interactive television program guide application is at least partially implemented and on which a plurality of non-program-guide applications are at least partially implemented, wherein:

one application from among the interactive television program guide application and plurality of non-program-guide applications operates as a foreground application and another application from among the interactive television program guide application and plurality of non-program-guide applications operates as a background application;

the foreground application operates while the background application operates;

events that require immediate attention by the background application are checked for while the foreground application operates;

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the operation of the foreground application is suspended when one of the events that requires immediate attention is detected; and

a message is displayed on the user television equipment when operation of the foreground application is suspended asking the user whether the detected event should take place or whether operation of the given foreground application should be resumed.

93. The system defined in claim 92 wherein the interactive television program guide application checks for the events by checking for user activity.

94. The system defined in claim 93 wherein the interactive television program guide application checks for the user activity by checking for user key presses.

95. The system defined in claim 92 wherein the interactive television program guide application checks for events by checking for user-selected actions.

96. The system defined in claim 95 wherein the interactive television program guide checks for user-selected actions by checking for reminders.

97. A system having user television equipment, comprising:

means for implementing a plurality of non-program-guide applications at least partially on the user television equipment, wherein content

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associated with the non-program-guide applications is displayed on the user television equipment; and

means for providing a user with an opportunity to set reminders for the content associated with the non-program-guide applications.

98. The system defined in claim 97 further comprising:

means for implementing an interactive television program guide application at least partially on the user television equipment; wherein content associated the interactive television program guide application is displayed on the user television equipment; and

means for providing the user with an opportunity to set reminders for the content associated with the interactive television program guide application.

99. A system, comprising:

user television equipment on which a plurality of non-program-guide applications are at least partially implemented, wherein content associated with the non-program-guide applications is displayed on the user television equipment, and wherein a user is provided with an opportunity to set reminders for the content associated with the non-program-guide applications.

100. The system defined in claim 99 wherein an interactive television program guide application is at least partially implemented on the user television

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equipment, wherein content associated the interactive television program guide application is displayed on the user television equipment, and wherein the user is provided with an opportunity to set reminders for the content associated with the interactive television program guide application.

101. A method for using a system having user television equipment, comprising:

implementing a plurality of non-program-guide applications at least partially on the user television equipment, wherein content associated with the non-program-guide applications is displayed on the user television equipment; and

providing a user with an opportunity to set reminders for the content associated with the non-program-guide applications.

102. The method defined in claim 101 further comprising:

implementing an interactive television program guide application at least partially on the user television equipment; wherein content associated the interactive television program guide application is displayed on the user television equipment; and

providing the user with an opportunity to set reminders for the content associated with the interactive television program guide application.

103. A system comprising:

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a television distribution facility having a server on which at least one non-program-guide application is implemented;

user television equipment that receives television programming from the television distribution facility and that has resources and on which an application program interface is at least partially implemented and on which an interactive television program guide application is at least partially implemented; and

means for using the application program interface to coordinate access to the resources among the interactive television program guide application and the at least one non-program-guide application.

104. The system defined in claim 103 wherein there are a plurality of non-program-guide applications implemented on the server, the system further comprising means for using the application program interface to coordinate access to the resources among the interactive television program guide application and the plurality of non-program-guide applications.

105. The system defined in claim 104 further comprising:

means for implementing at least one non-program-guide application on a server located on the Internet; and

means for using the application program interface to coordinate access to the resources among the interactive television program guide application, the at least one non-program-guide application located

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on the server on the Internet, and the plurality of non-program-guide applications located on the server at the television distribution facility.

106. The system defined in claim 103 further comprising:

means for implementing at least one non-program-guide application on a server located on the Internet; and

means for using the application program interface to coordinate access to the resources among the interactive television program guide application, the at least one non-program-guide application located on the server on the Internet, and the at least one non-program-guide application located on the server at the television distribution facility.

107. A method for using a system having a a television distribution facility having a server on which at least one non-program-guide application is implemented and having user television equipment connected to the television distribution facility for receiving television programming, comprising:

implementing an application program interface and an interactive television program guide application at least partially on the user television equipment; and

using the application program interface to coordinate access to the resources among the interactive television program guide application and the at least one non-program-guide application.

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108. The method defined in claim 107 wherein there are a plurality of non-program-guide applications implemented on the server, the method further comprising using the application program interface to coordinate access to the resources among the interactive television program guide application and the plurality of non-program-guide applications.

109. The method defined in claim 108 further comprising:

implementing at least one non-program-guide application on a server located on the Internet; and

using the application program interface to coordinate access to the resources among the interactive television program guide application, the at least one non-program-guide application located on the server on the Internet, and the plurality of non-program-guide applications located on the server at the television distribution facility.

110. The method defined in claim 107 further comprising:

implementing at least one non-program-guide application on a server located on the Internet; and

using the application program interface to coordinate access to the resources among the interactive television program guide application, the at least one non-program-guide application located on the server on the Internet, and the at least one non-

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program-guide application located on the server at the television distribution facility.

111. A system comprising:

a television distribution facility having a server on which at least one non-program-guide application is implemented; and

user television equipment that receives television programming from the television distribution facility and that has resources and on which an application program interface and an interactive television program guide application are at least partially implemented, wherein the application program interface coordinates access to the resources among the interactive television program guide application and the at least one non-program-guide application.

112. The system defined in claim 111 wherein there are a plurality of non-program-guide applications implemented on the server, and wherein the user television equipment is further configured to use the application program interface to coordinate access to the resources among the interactive television program guide application and the plurality of non-program-guide applications.

113. The system defined in claim 112 further comprising a server located on the Internet on which at least one non-program-guide application is implemented, wherein the application program interface coordinates access to the resources among the interactive television program guide application, the at least one

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non-program-guide application located on the server on the Internet, and the plurality of non-program-guide applications located on the server at the television distribution facility.

114. The system defined in claim 111 further comprising a server located on the Internet on which at least one non-program-guide application is implemented, wherein the application program interface coordinates access to the resources among the interactive television program guide application, the at least one non-program-guide application located on the server on the Internet, and the at least one non-program-guide application located on the server at the television distribution facility.

115. An interactive television program guide system having user television equipment, comprising:

means for implementing an interactive television program guide application at least partially on the user television equipment;

means for implementing a plurality of non-program-guide applications at least partially on the user television equipment, wherein the interactive television program guide application and non-program-guide application have resources;

means for implementing an application program interface at least partially on the user television equipment; and

means for using the application program interface to authenticate requests from the applications to use the resources.

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116. The system defined in claim 115 further comprising means for determining access rights for the applications with the application program interface.

117. A method for using an interactive television program guide system having user television equipment, comprising:

- implementing an interactive television program guide application at least partially on the user television equipment;

- implementing a plurality of non-program-guide applications at least partially on the user television equipment, wherein the interactive television program guide application and non-program-guide application have resources;

- implementing an application program interface at least partially on the user television equipment; and

- using the application program interface to authenticate requests from the applications to use the resources.

118. The method defined in claim 117 further comprising determining access rights for the applications with the application program interface.

119. An interactive television program guide system, comprising:

- user television equipment on which an interactive television program guide application having resources, a plurality of non-program-guide

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applications having resources, and an application program interface are at least partially implemented, wherein the user television equipment is configured so that the application program interface authenticates requests from the applications to use the resources.

120. The system defined in claim 119 wherein the user television equipment is further configured so that the application program interface determines access rights for the applications.

121. A system comprising:

means for implementing at least one non-program-guide application on a server located on the Internet;

a television distribution facility that provides television programming;

user television equipment that receives television programming from the television distribution facility and that has resources and on which an application program interface and an interactive television program guide application are at least partially implemented; and

means for using the application program interface to coordinate access to the resources among the interactive television program guide application and the at least one non-program-guide application.

122. A method for using a system comprising:

implementing at least one non-program-guide application on a server located on the Internet;

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providing television programming with a television distribution facility;

receiving television programming with user television equipment, wherein the user television equipment has resources;

implementing an application program interface at least partially on the user television equipment;

implementing an interactive television program guide application at least partially on the user television equipment; and

using the application program interface to coordinate access to the resources among the interactive television program guide application and the at least one non-program-guide application.

123. A system comprising:

a server located on the Internet on which at least one non-program-guide application is implemented;

a television distribution facility that provides television programming; and

user television equipment that receives television programming from the television distribution facility and that has resources and on which an application program interface and an interactive television program guide application are at least partially implemented, wherein the application program interface coordinates access to the resources among the interactive television program guide application and the at least one non-program-guide application.

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124. A system in which there are multiple interconnected user television equipment devices in the home of a user and in which there are resources, comprising:

means for implementing an interactive television program guide on a first user television equipment device; and

means for implementing at least one other application on a second user television equipment device that is connected to the first user television equipment device, wherein an application program interface is implemented on at least one of the first and second user television equipment devices, and wherein the application program interface coordinates access of the interactive television program guide application and the other application to the resources.

125. A method for using a system in which there are multiple interconnected user television equipment devices in the home of a user and in which there are resources, comprising:

implementing an interactive television program guide on a first user television equipment device; and

implementing at least one other application on a second user television equipment device that is connected to the first user television equipment device, wherein an application program interface is implemented on at least one of the first and second user television equipment devices, and wherein the application program interface coordinates

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access of the interactive television program guide application and the other application to the resources.

126. A system in which there are multiple interconnected user television equipment devices in the home of a user and in which there are resources, comprising:

a first user television equipment device on which an interactive television program guide application is implemented; and

a second user television equipment device that is connected to the first user television equipment device and on which at least one other application is implemented, wherein an application program interface is implemented on at least one of the first and second user television equipment devices, and wherein the application program interface coordinates access of the interactive television program guide application and the other application to the resources.

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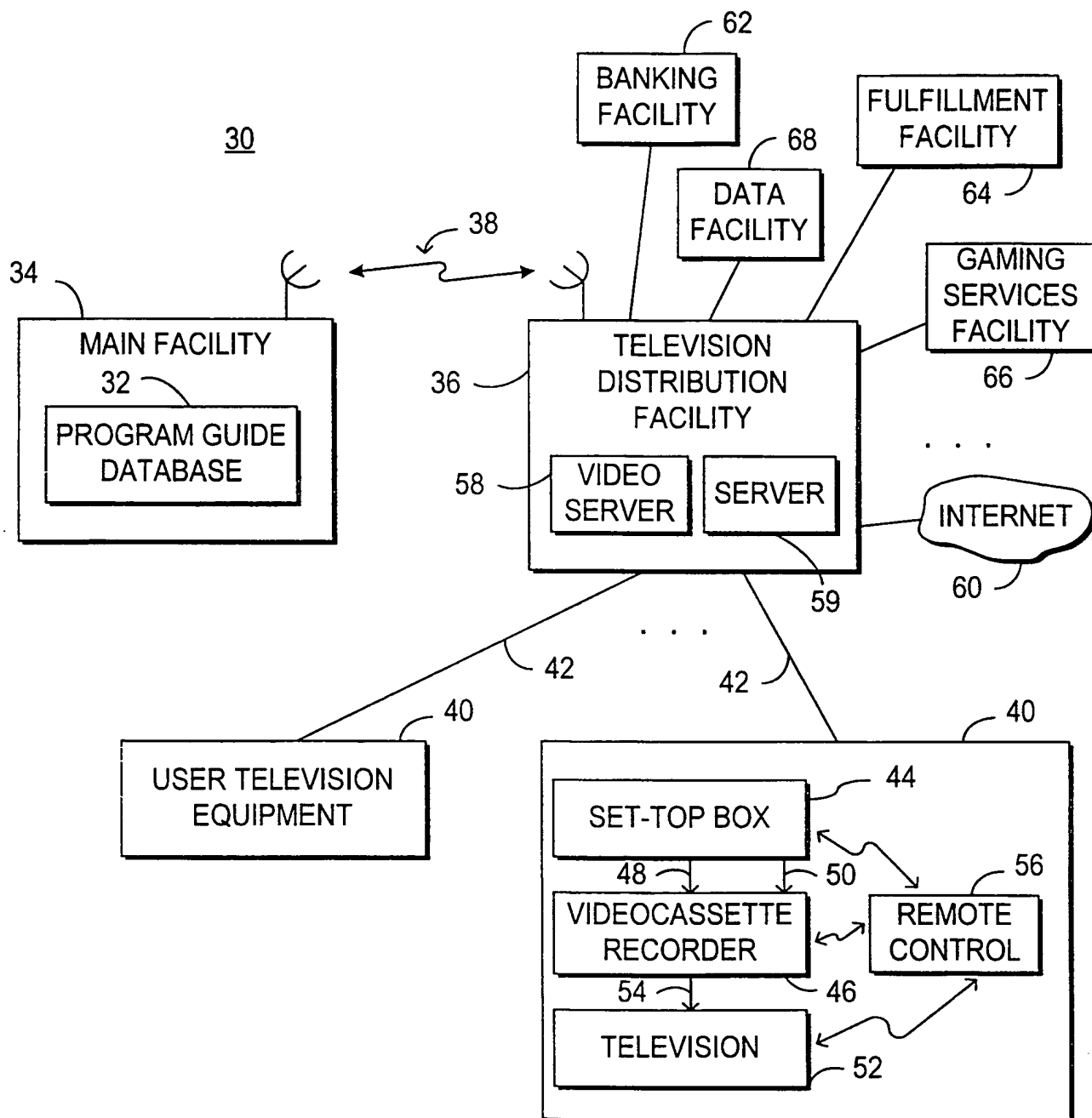


FIG. 1

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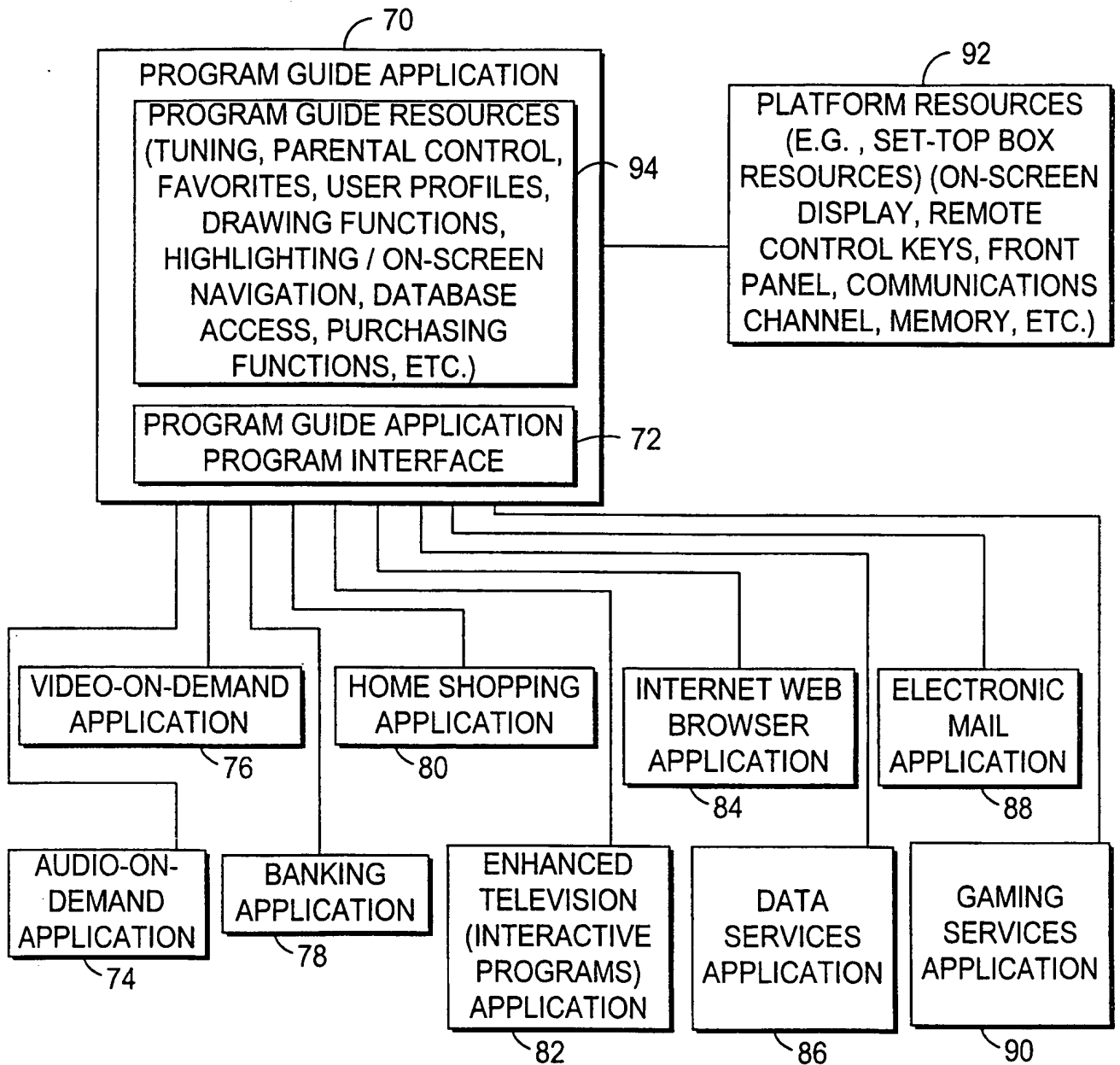


FIG. 2

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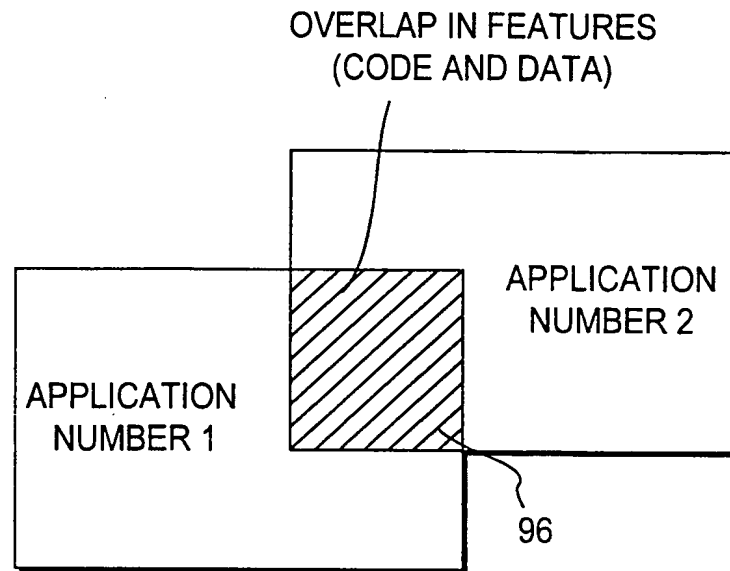
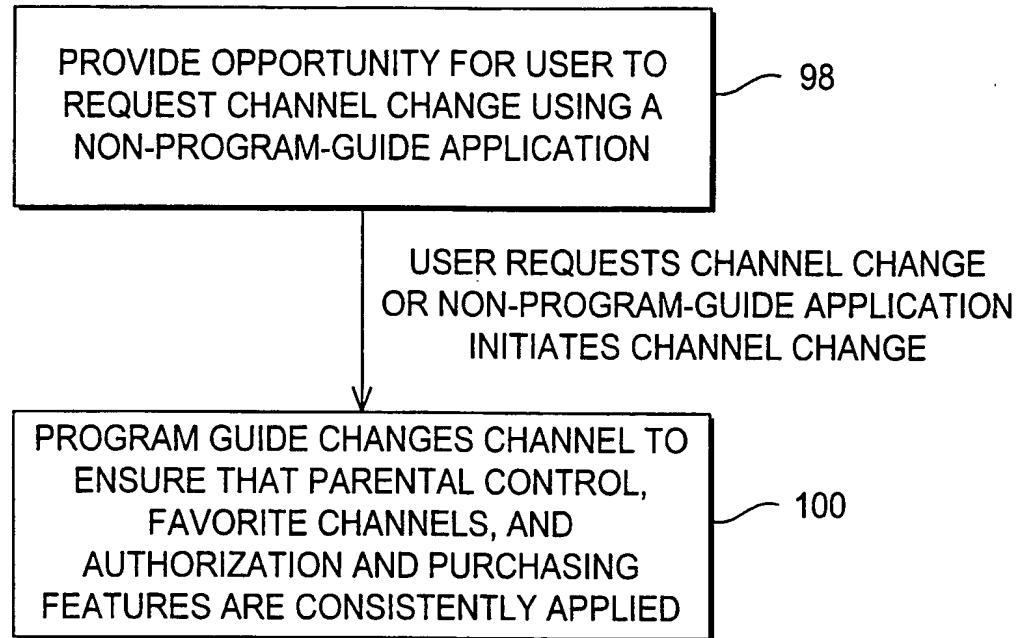
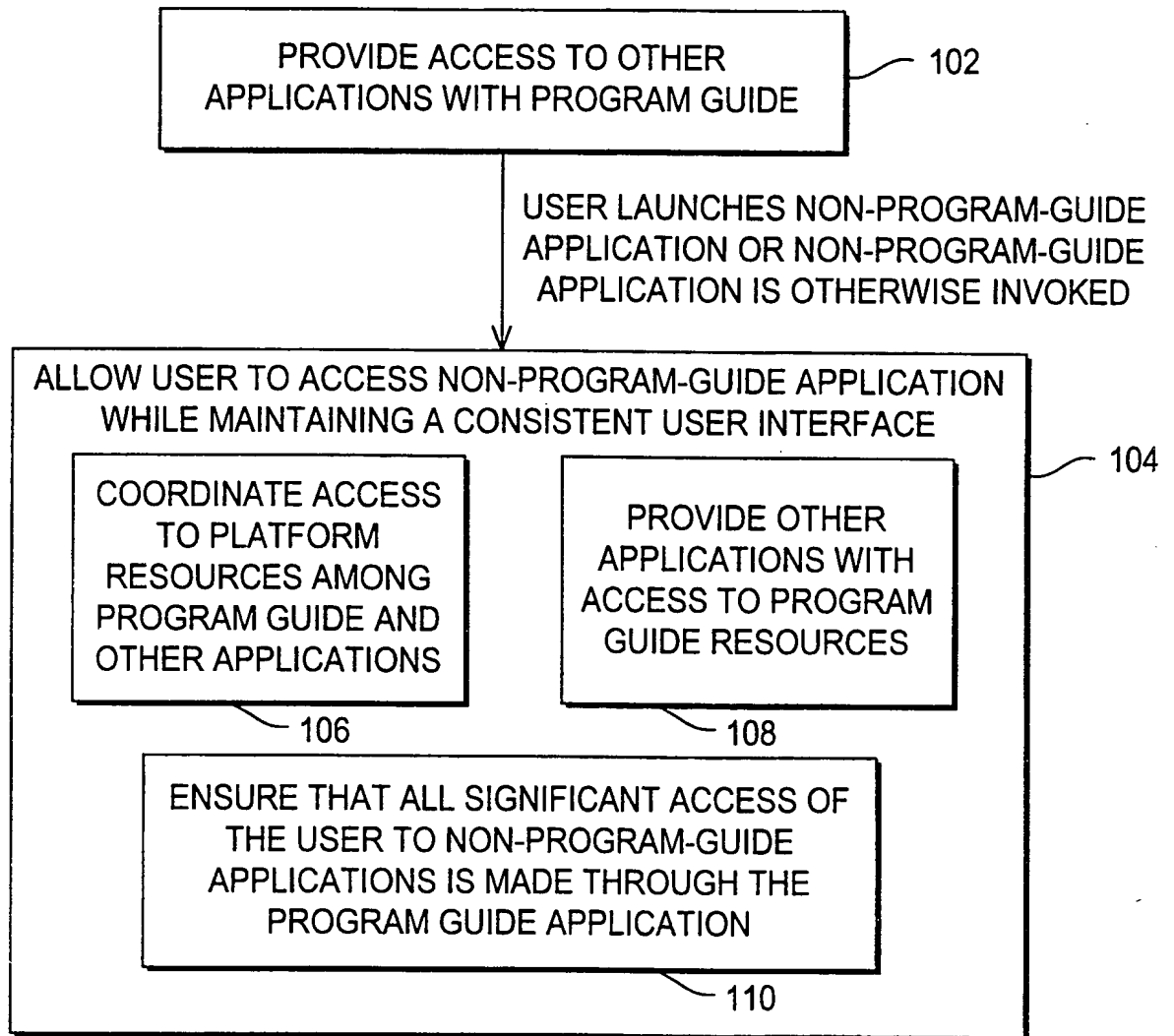


FIG. 3

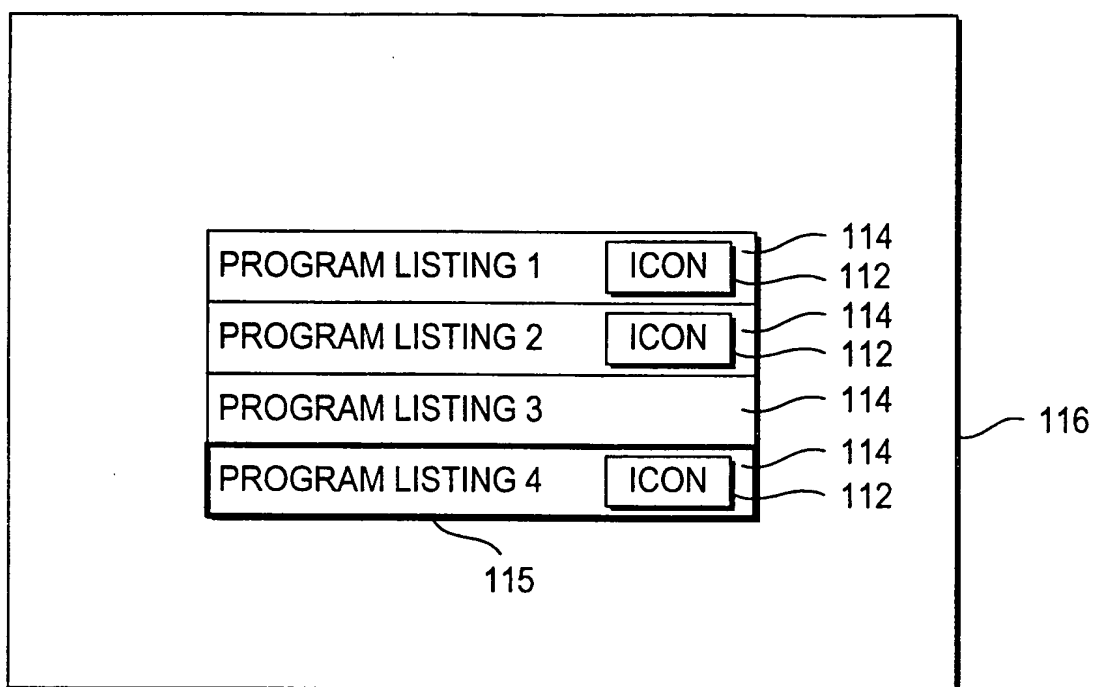
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*FIG. 4*

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**FIG. 5**

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*FIG. 6*

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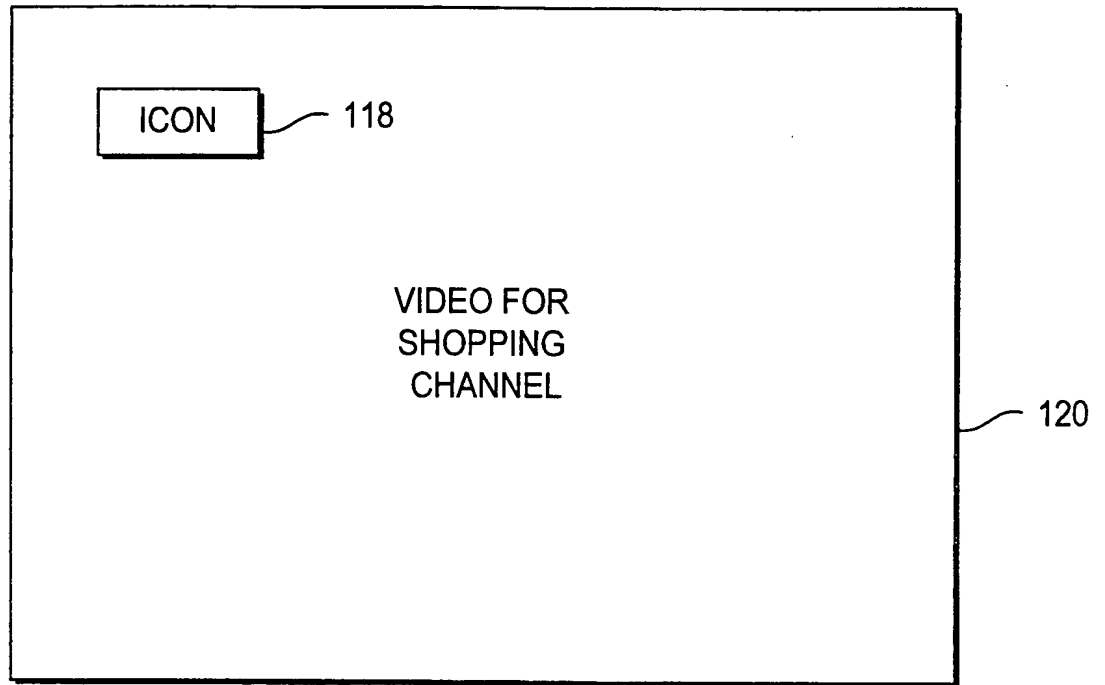
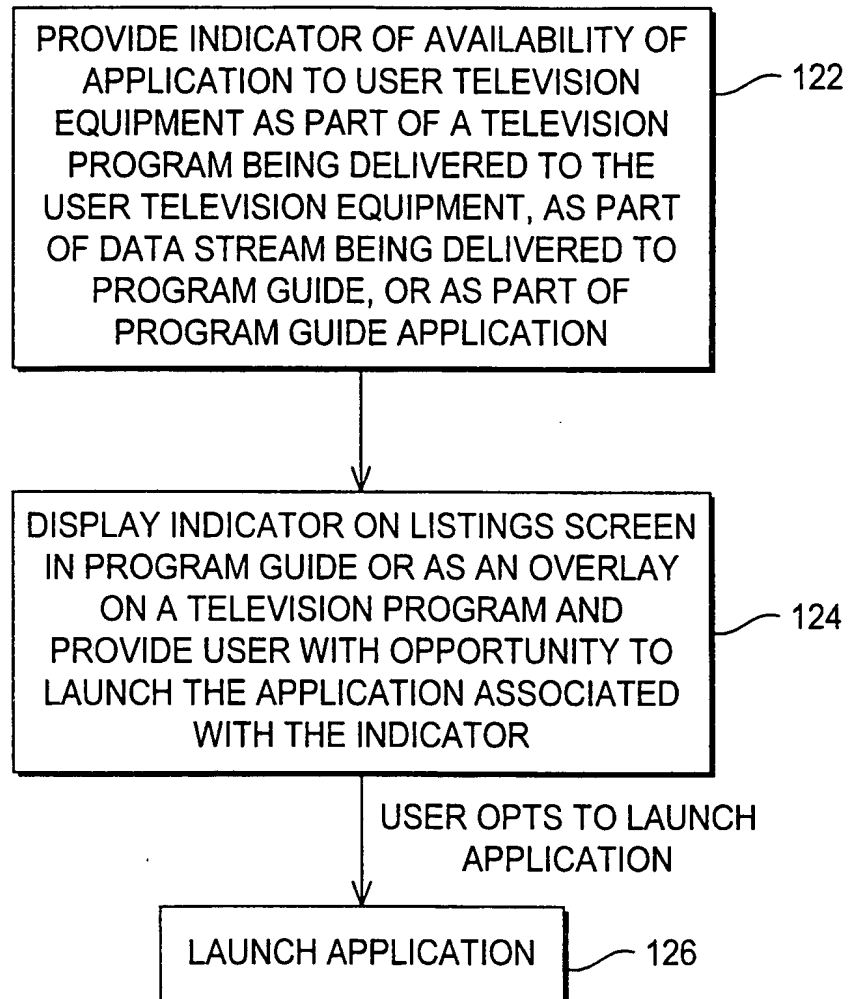
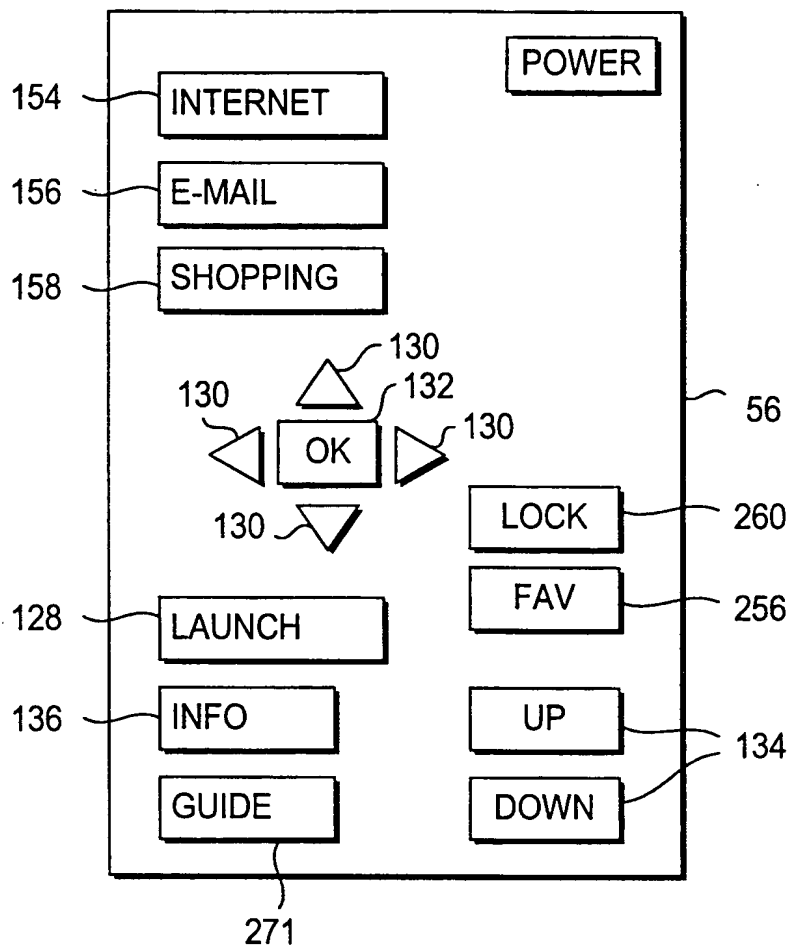


FIG. 7

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*FIG. 8*

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**FIG. 9**

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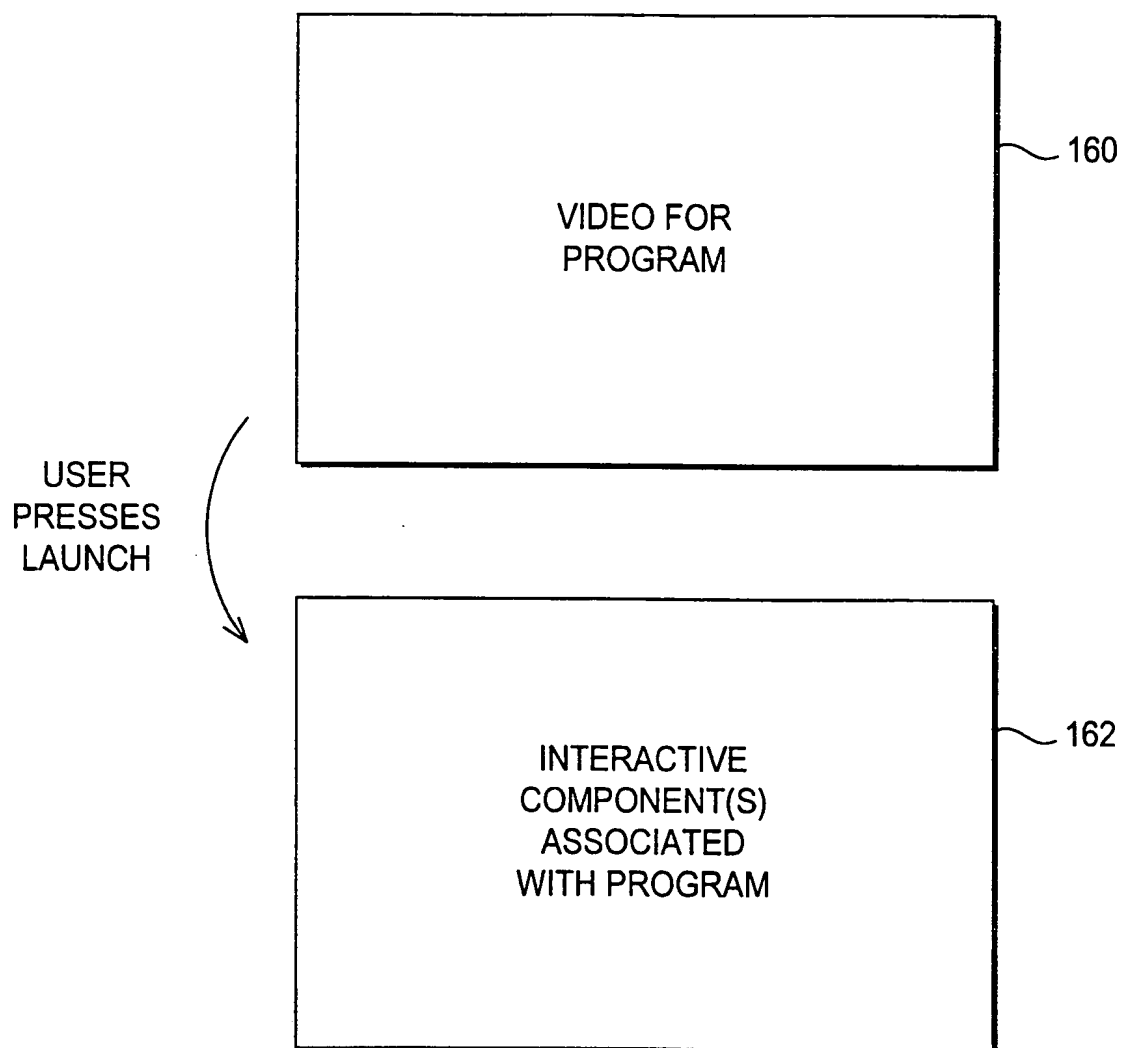


FIG. 10

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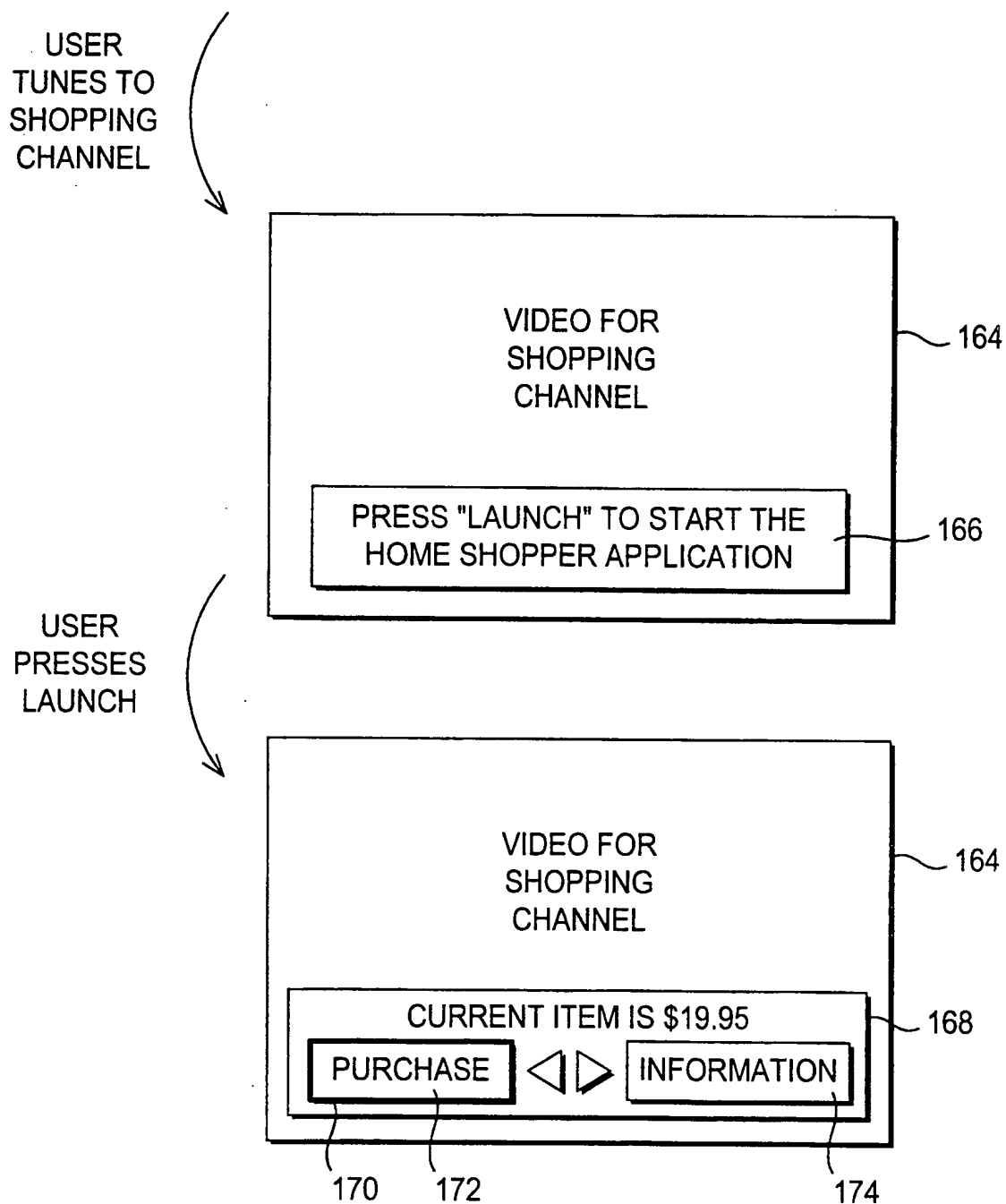


FIG. 11

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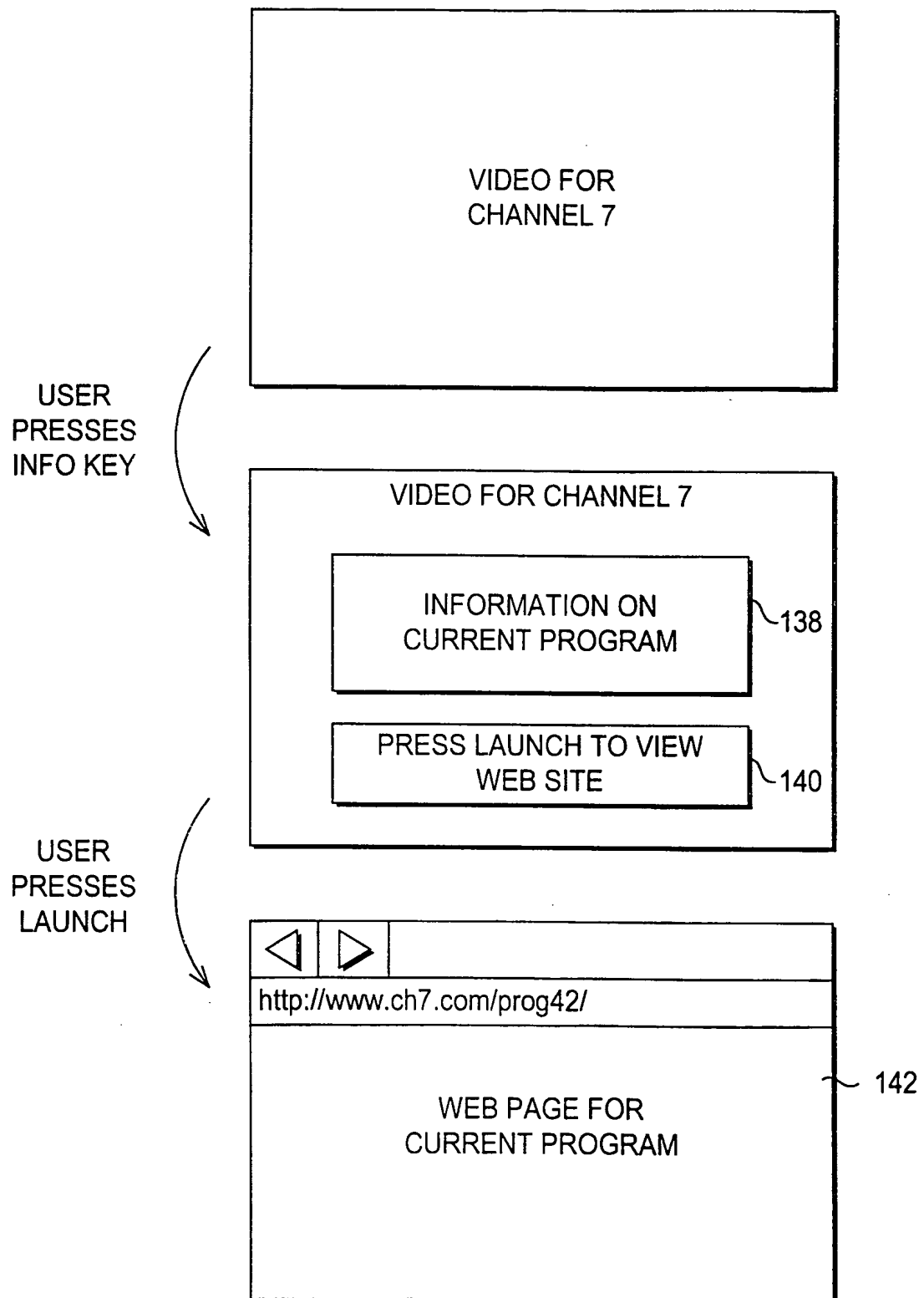


FIG. 12a

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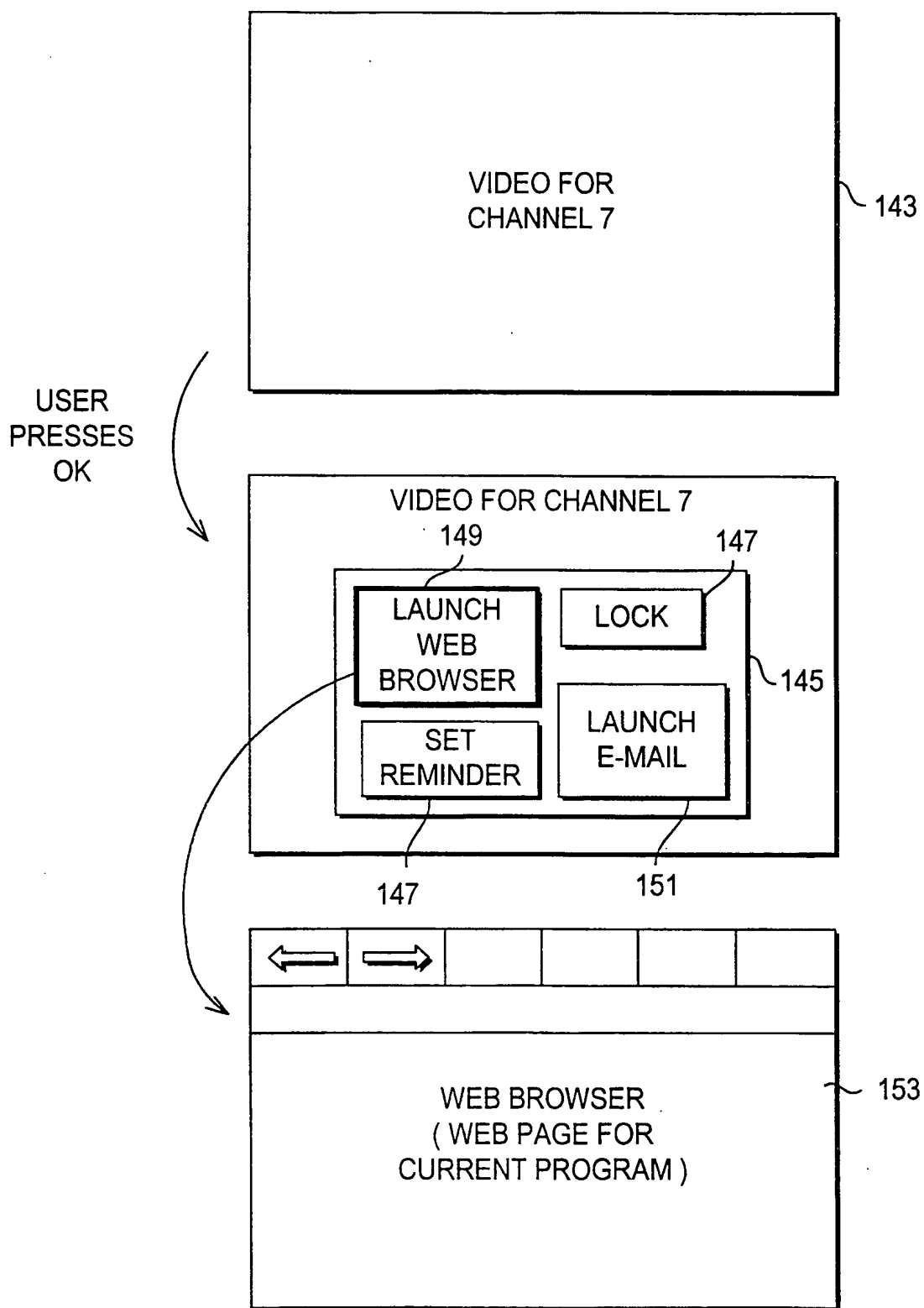
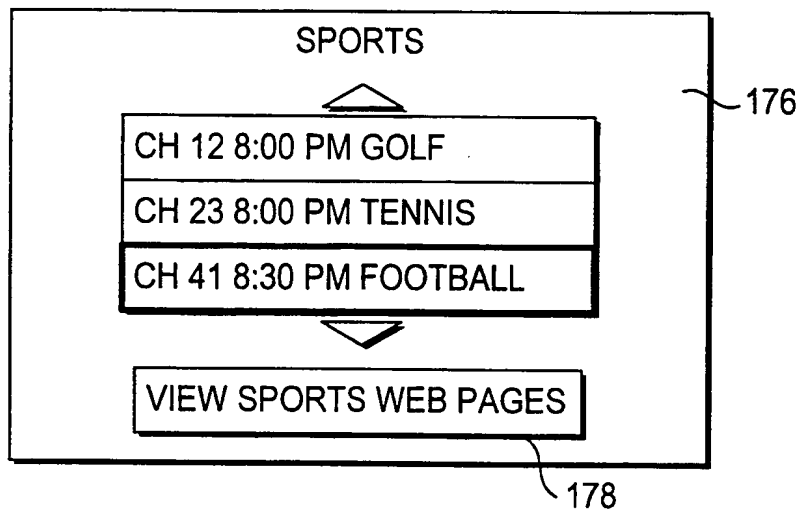
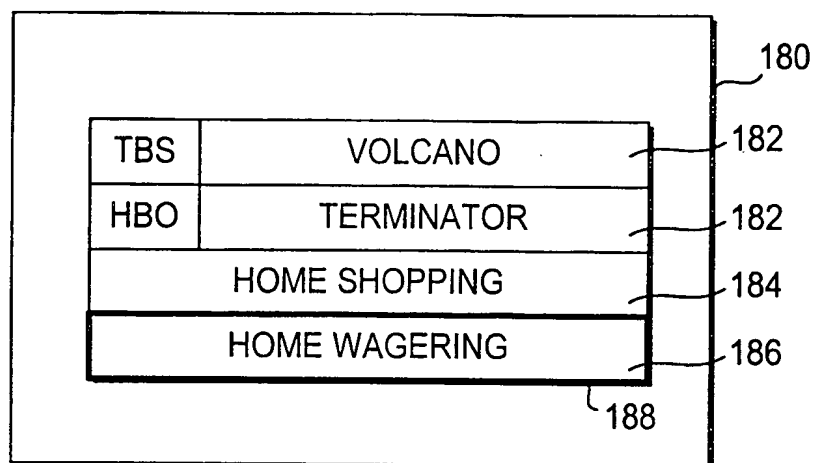


FIG. 12b

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*FIG. 13*

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*FIG. 14*

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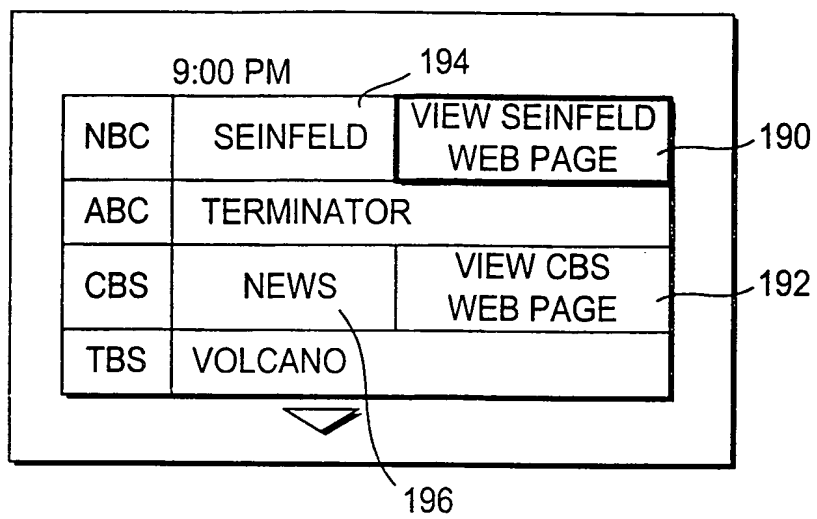
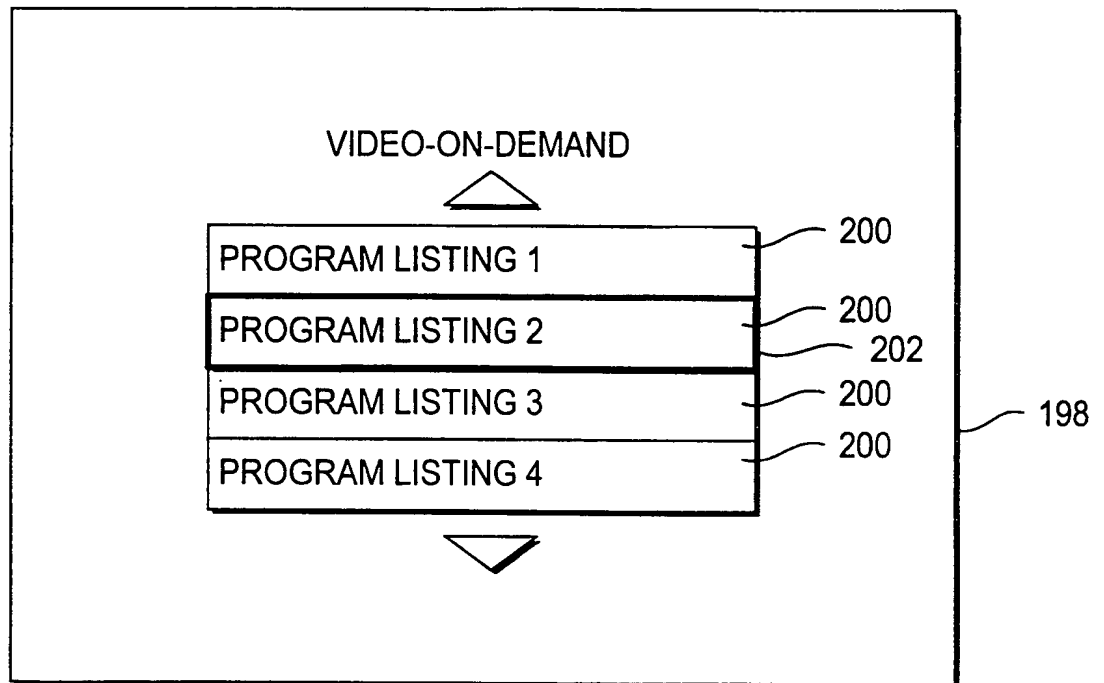
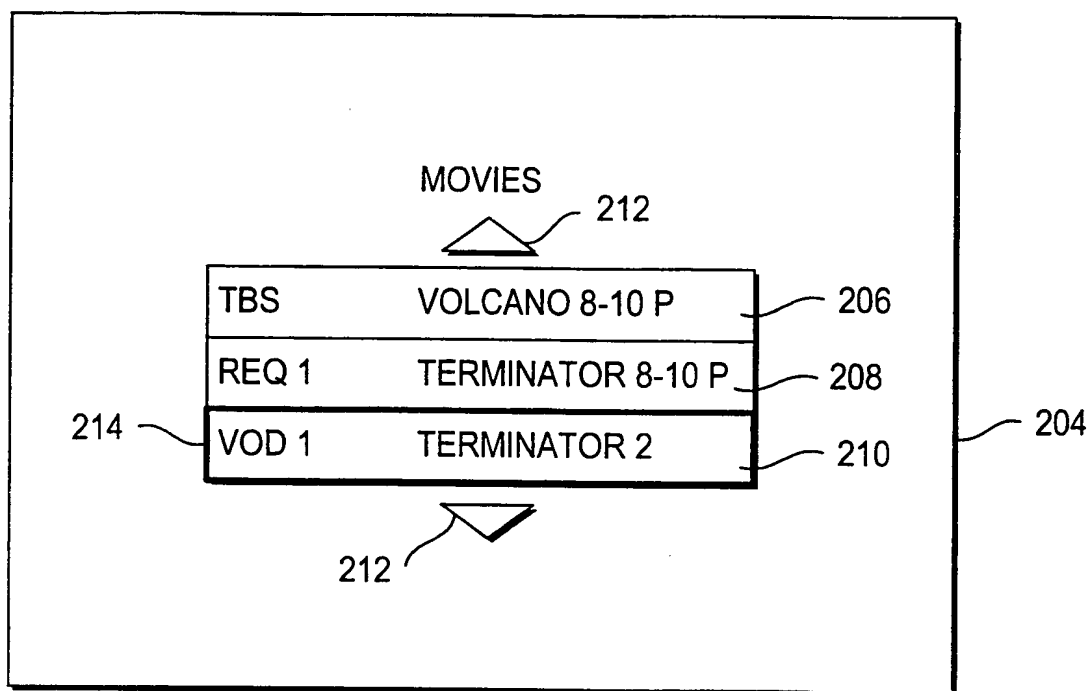


FIG. 15

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*FIG. 16*

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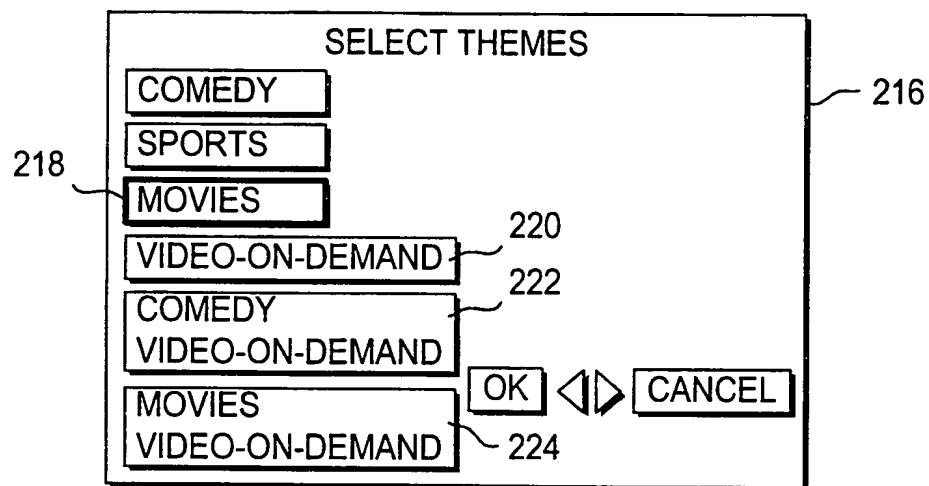
*FIG. 17a*

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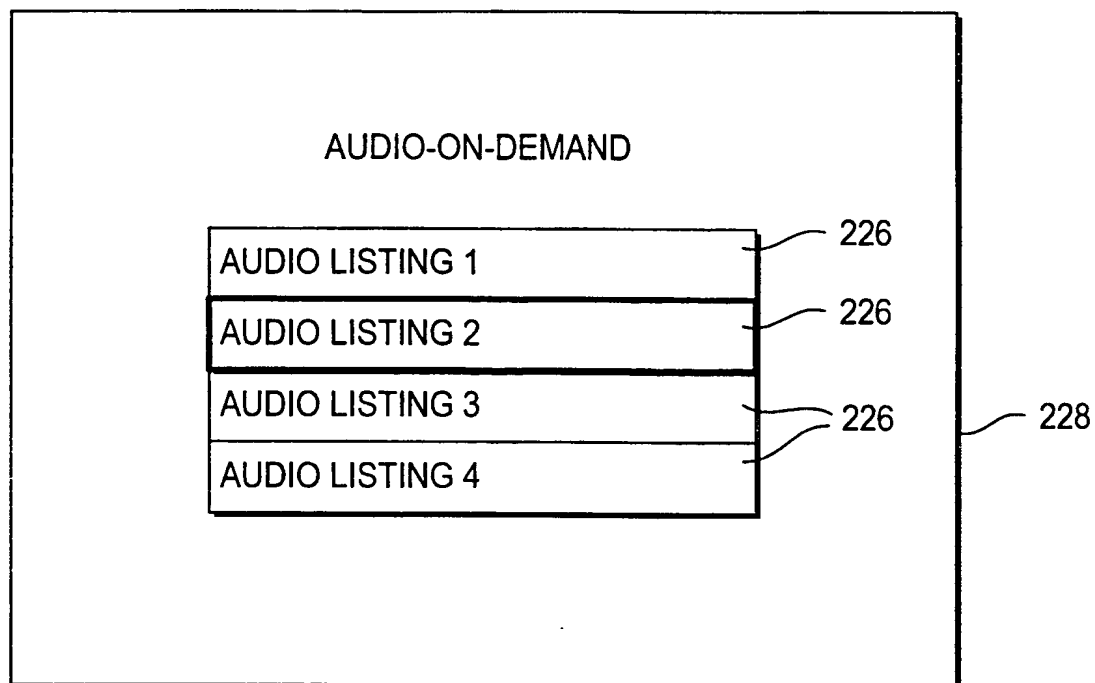
	8:00	8:30	9:00
23 TBS	PROGRAM 1	PROGRAM 2	
VOD 1	PROGRAM 3		
VOD 2	PROGRAM 4		
46 A+E	PROGRAM 5	PROGRAM 6	

*FIG. 17b*

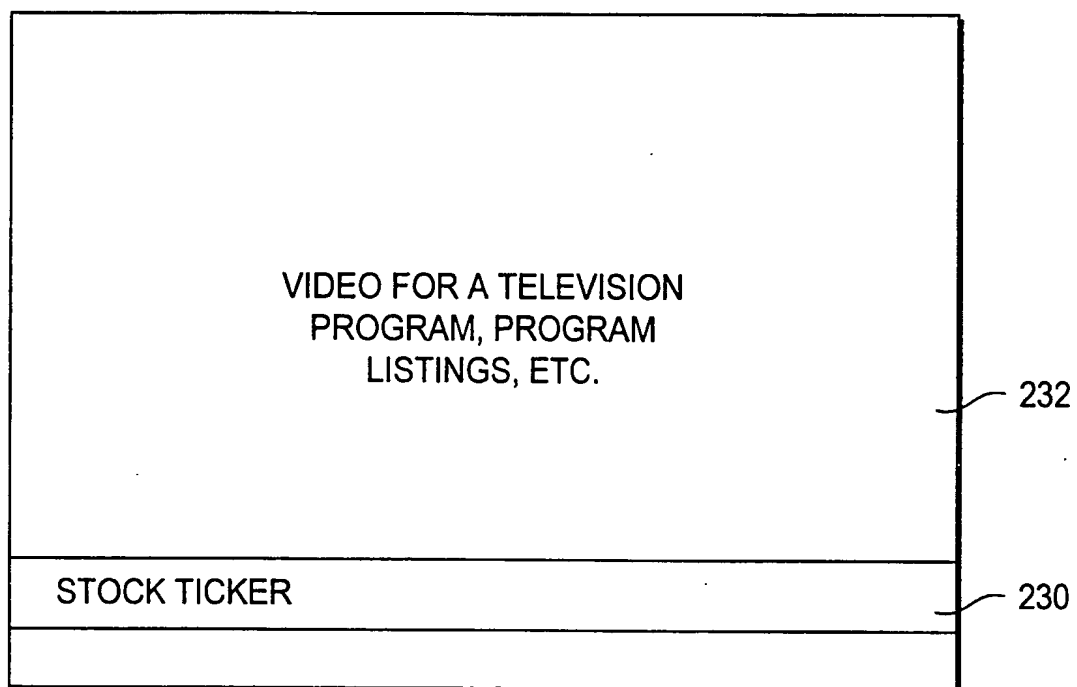
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*FIG. 18*

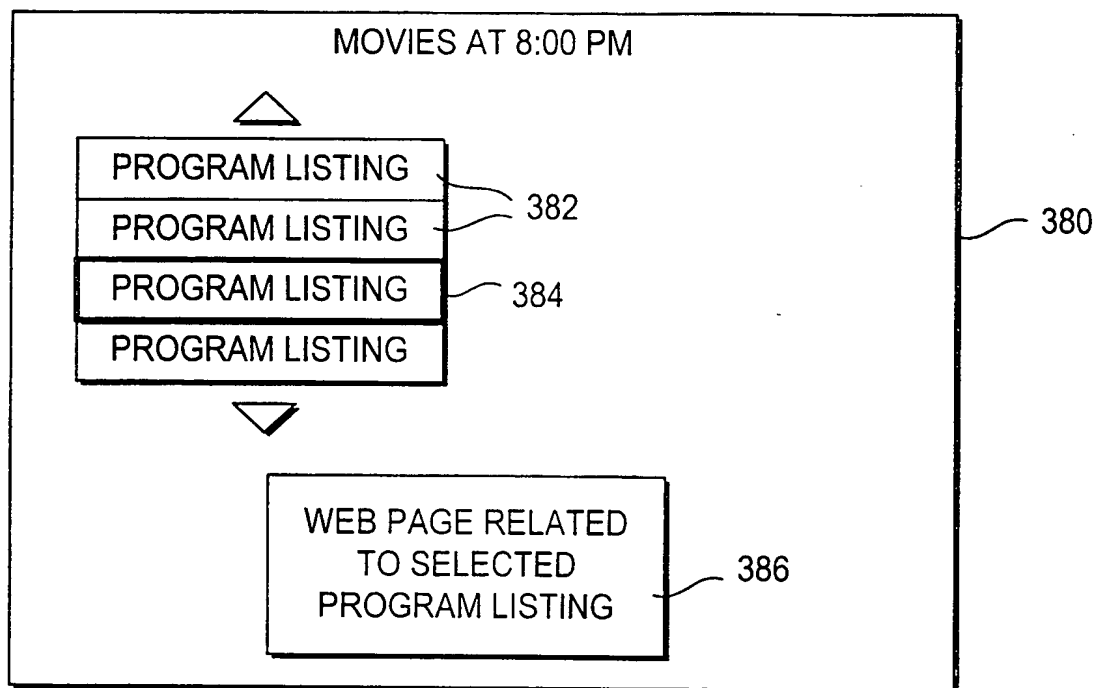
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*FIG. 19a*

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*FIG. 19b*

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*FIG. 20*

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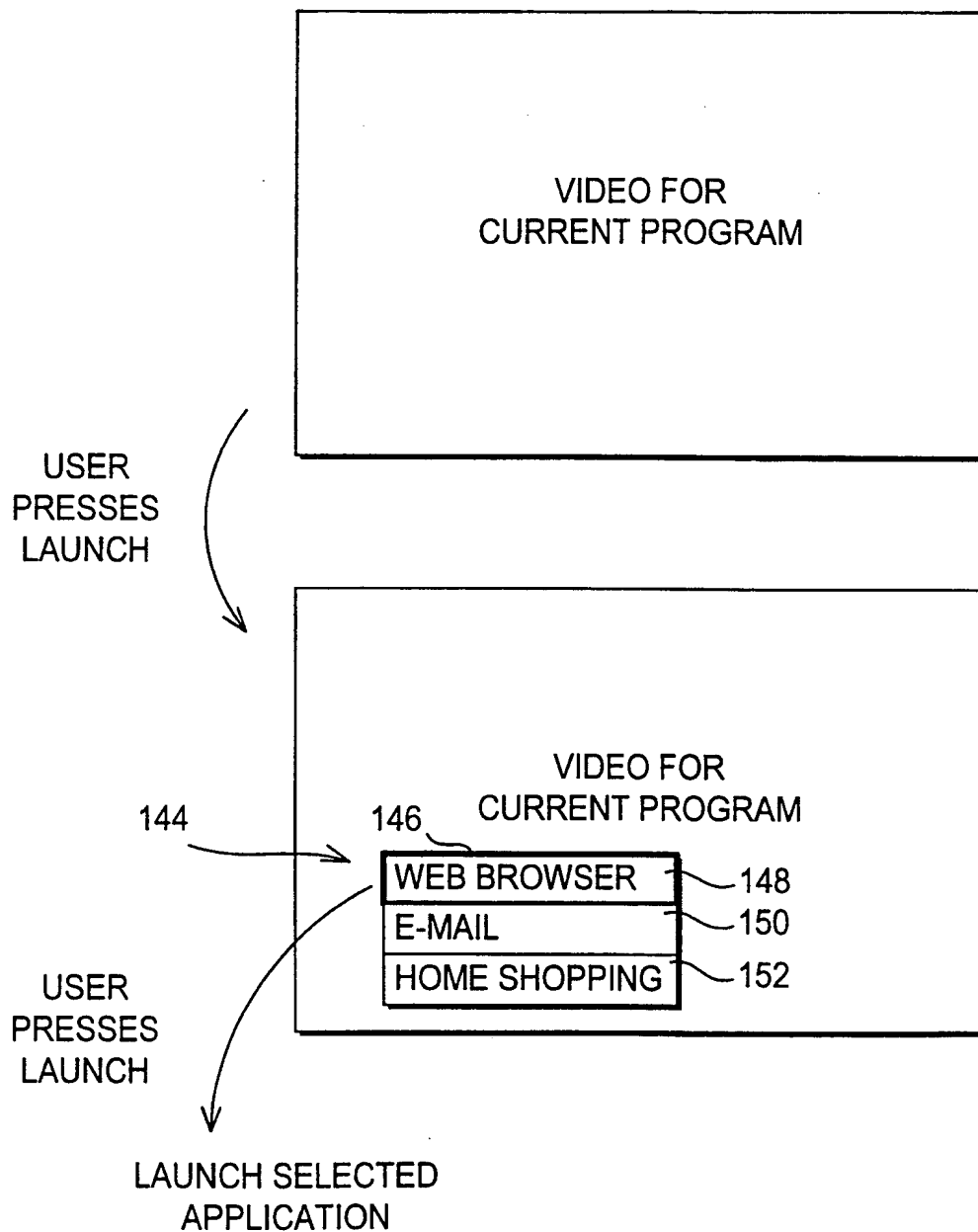


FIG. 21a

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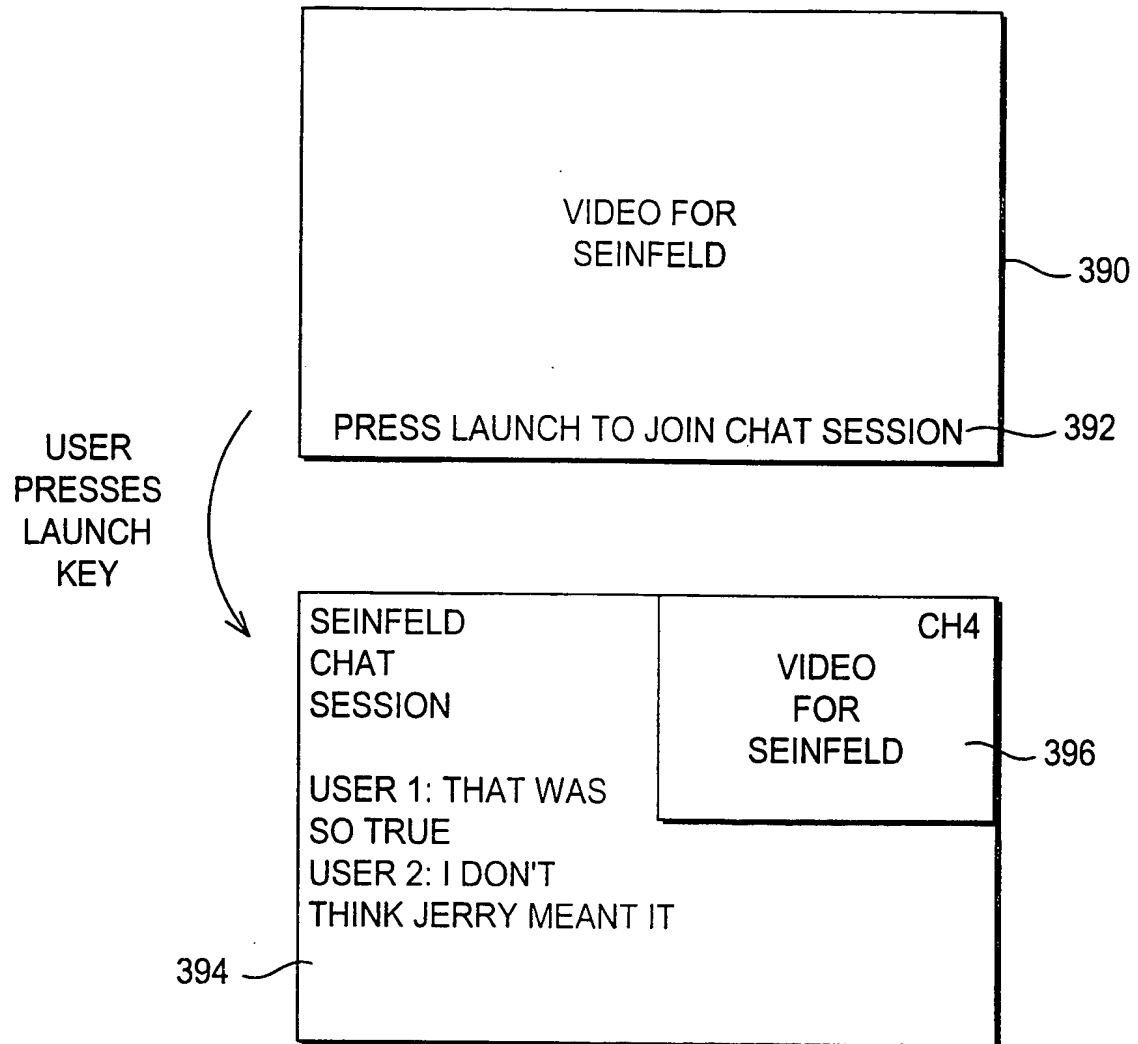
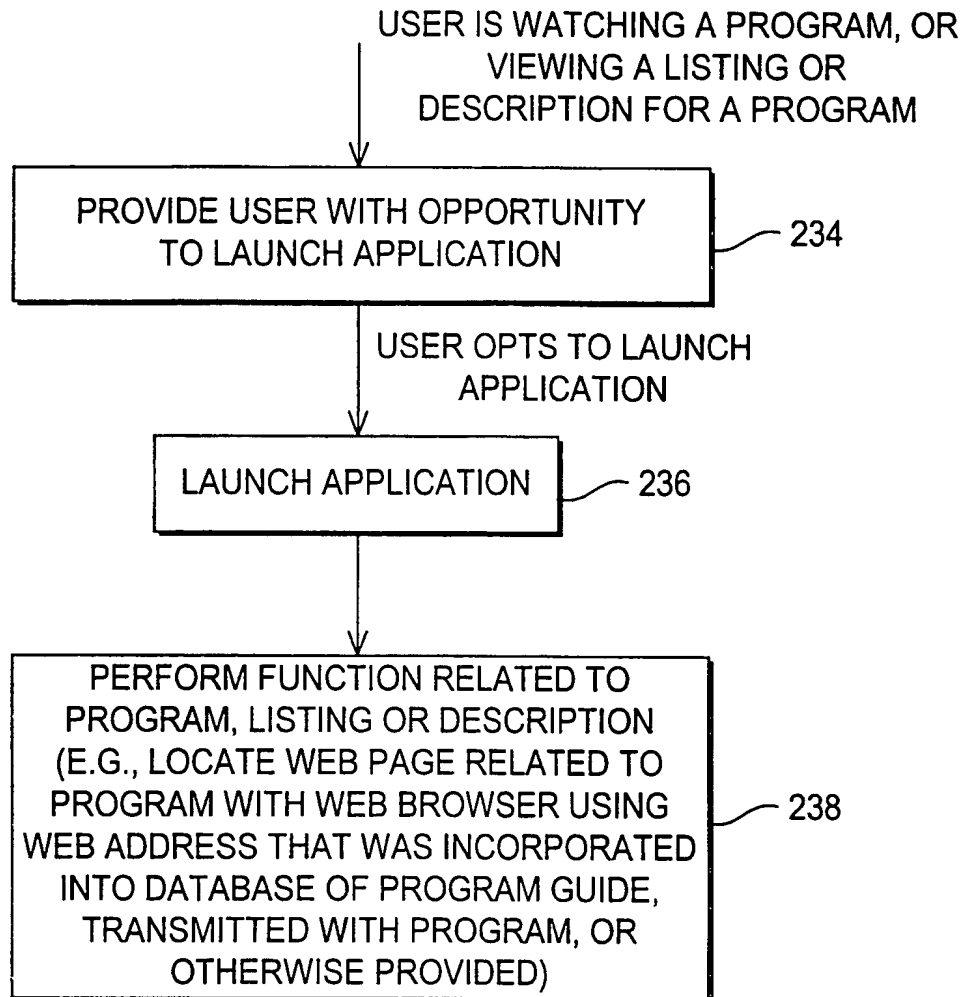
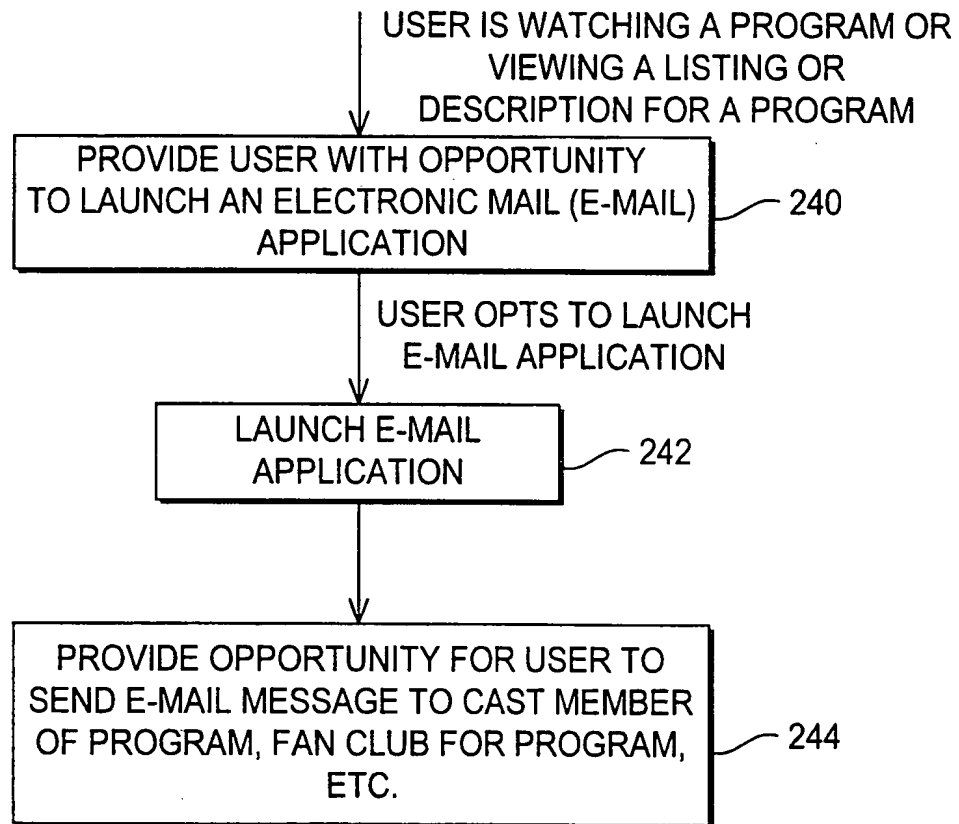


FIG. 21b

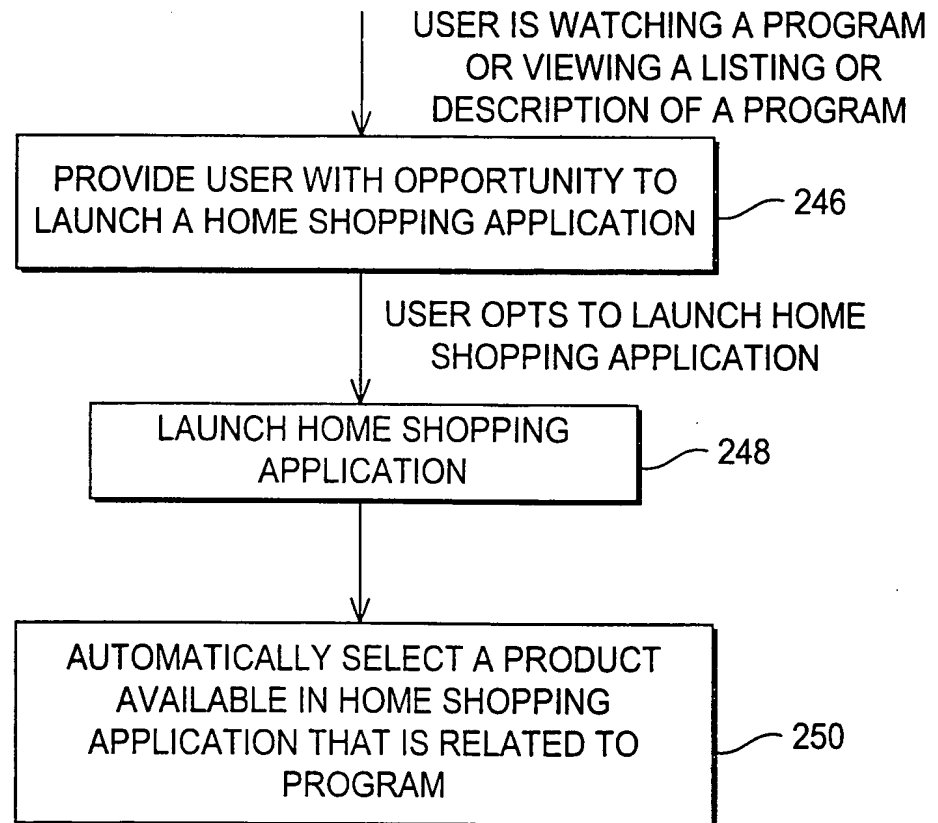
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*FIG. 22*

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*FIG. 23*

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*FIG. 24*

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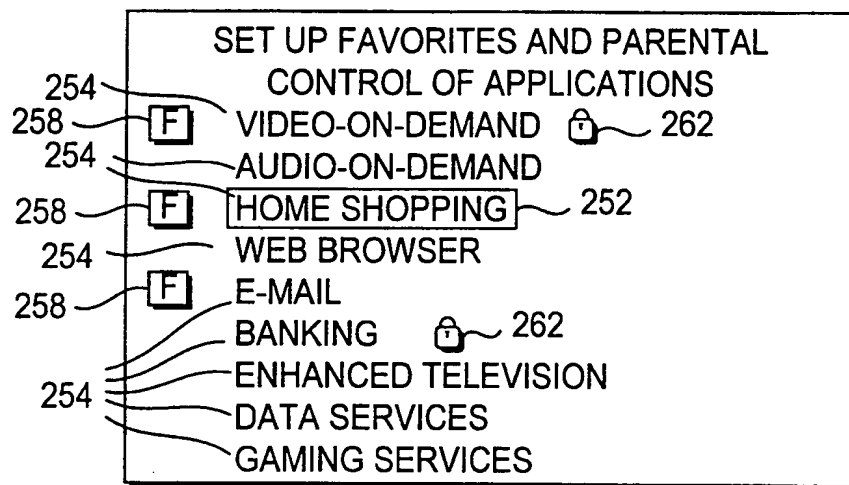


FIG. 25a

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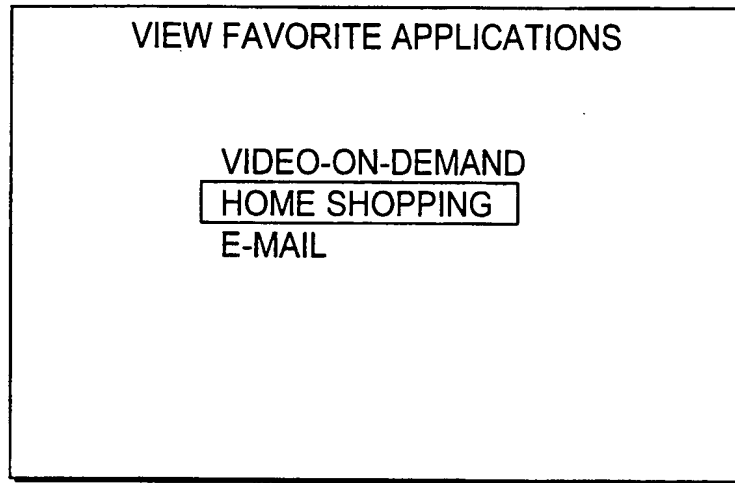


FIG. 25b

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VIDEO-ON-DEMAND

YOU MUST ENTER YOUR PARENTAL
CONTROL PASSWORD TO ACCESS
THIS SERVICE

ENTER PASSWORD:

FIG. 25c

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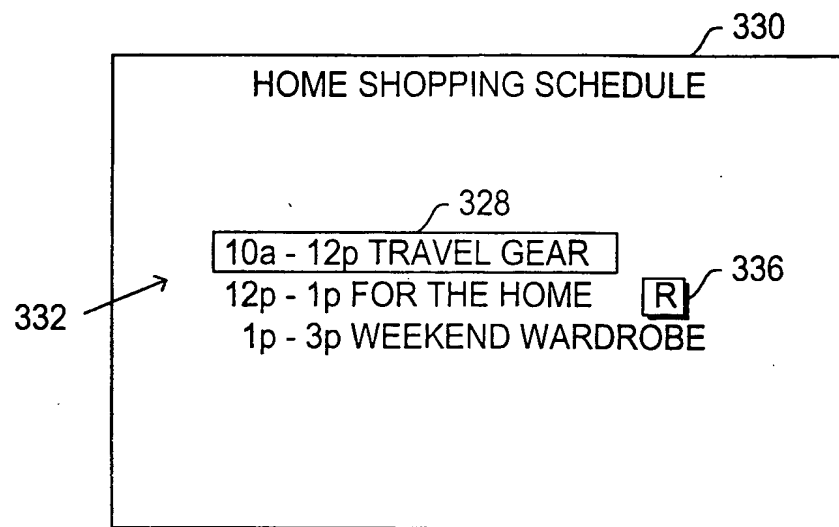
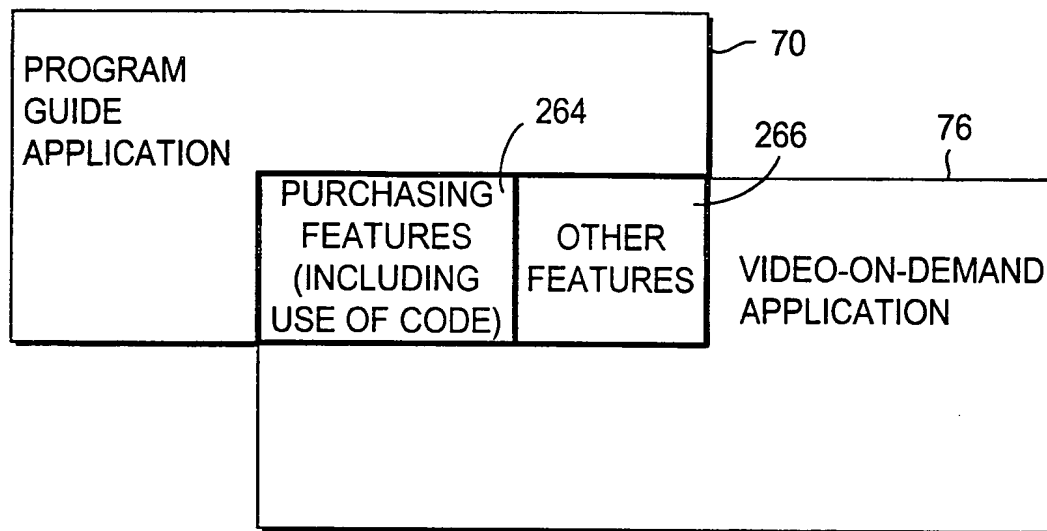


FIG. 25d

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*FIG. 26*

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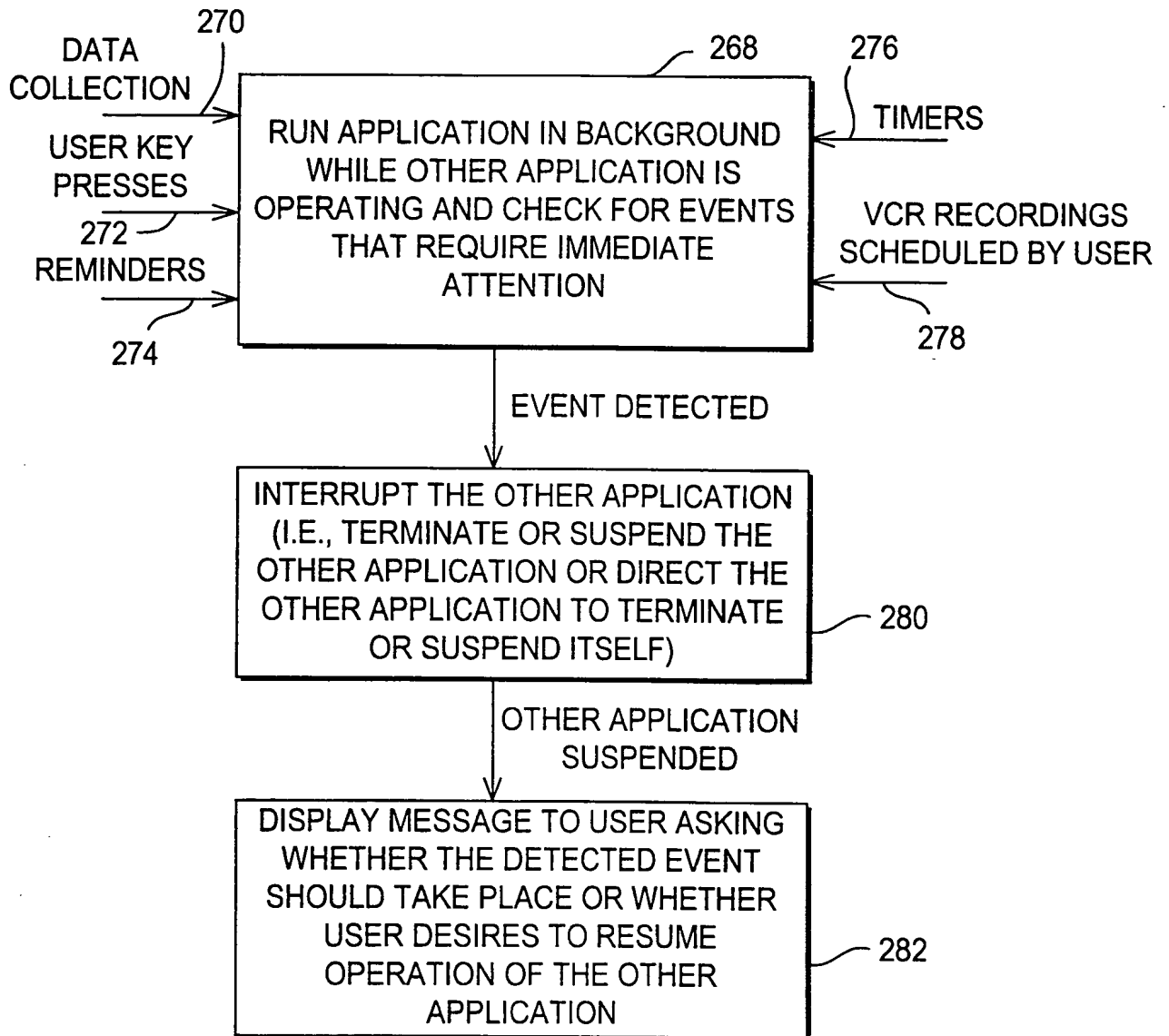


FIG. 27

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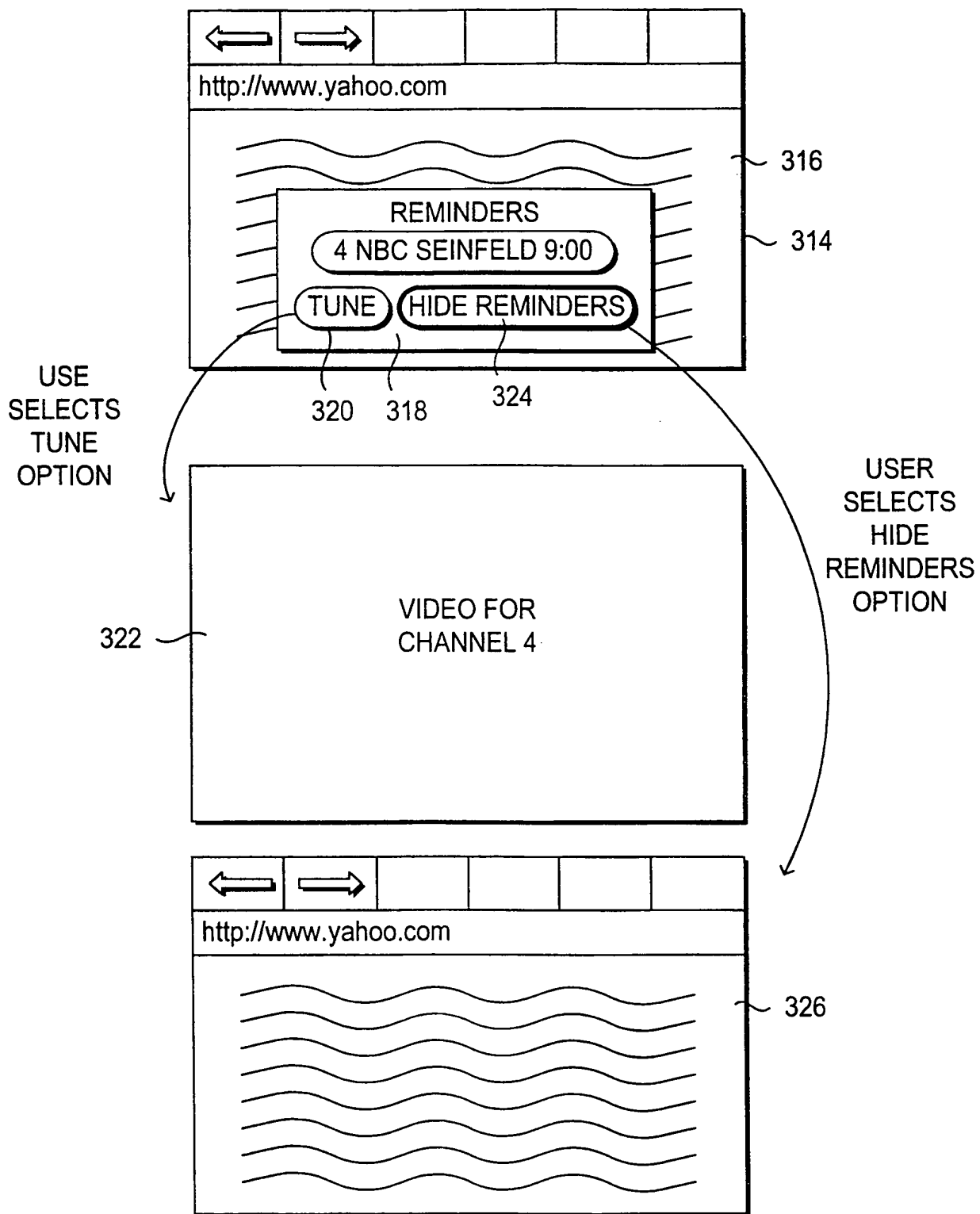
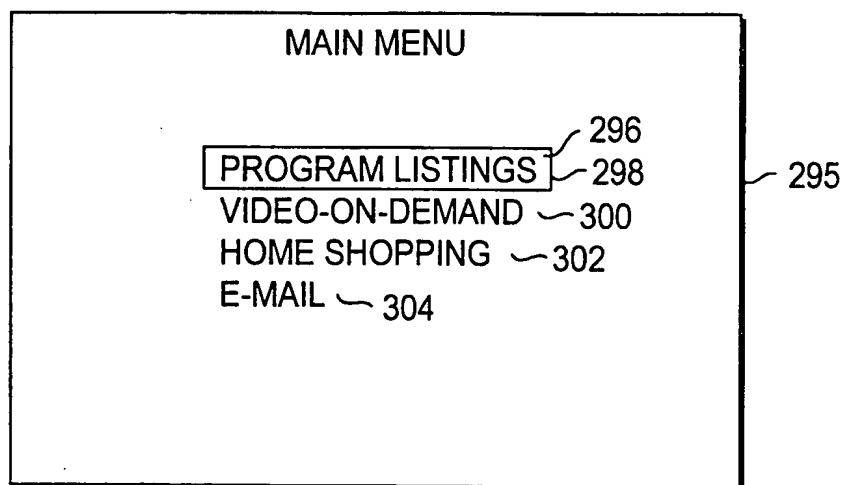


FIG. 28

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*FIG. 29a*

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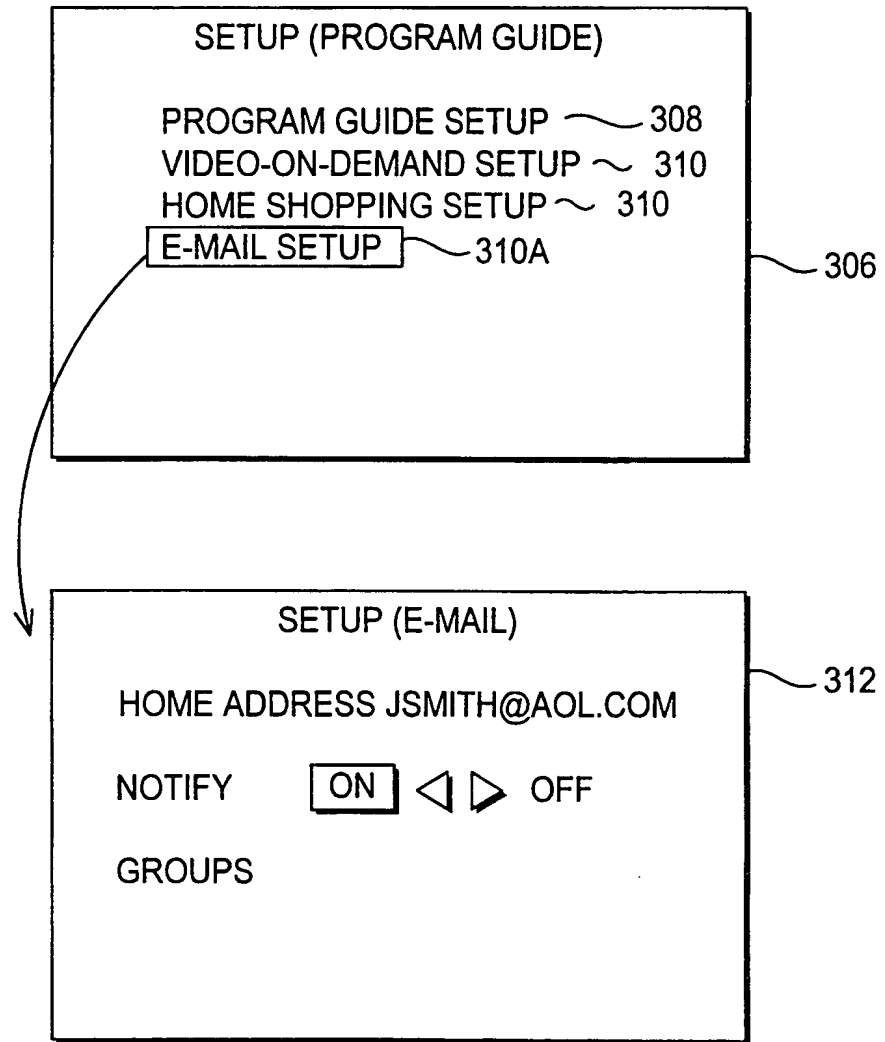
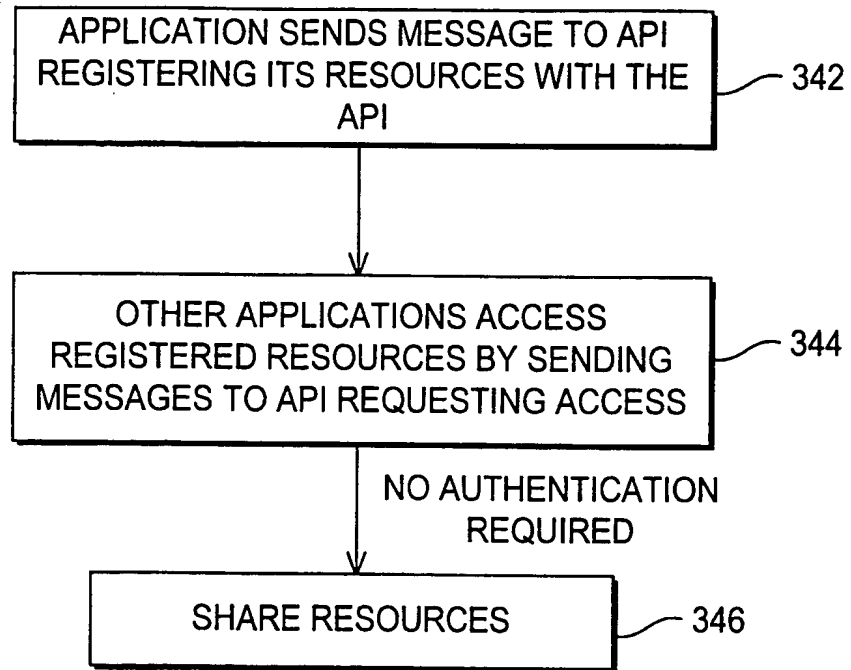
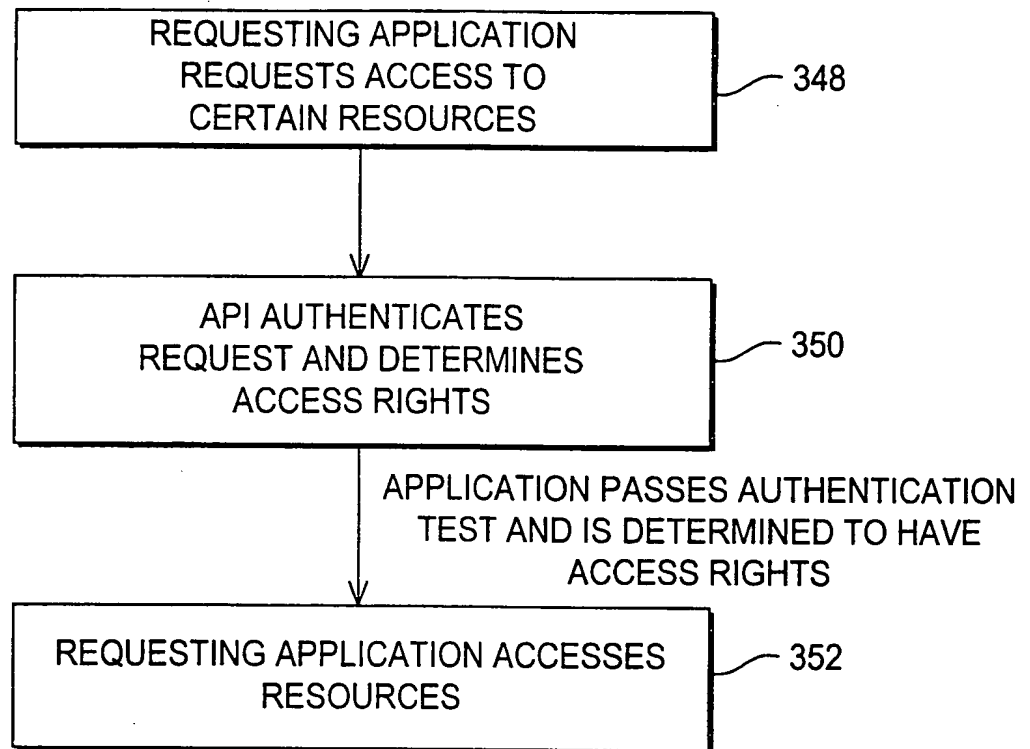


FIG. 29b

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*FIG. 30*

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*FIG. 31*

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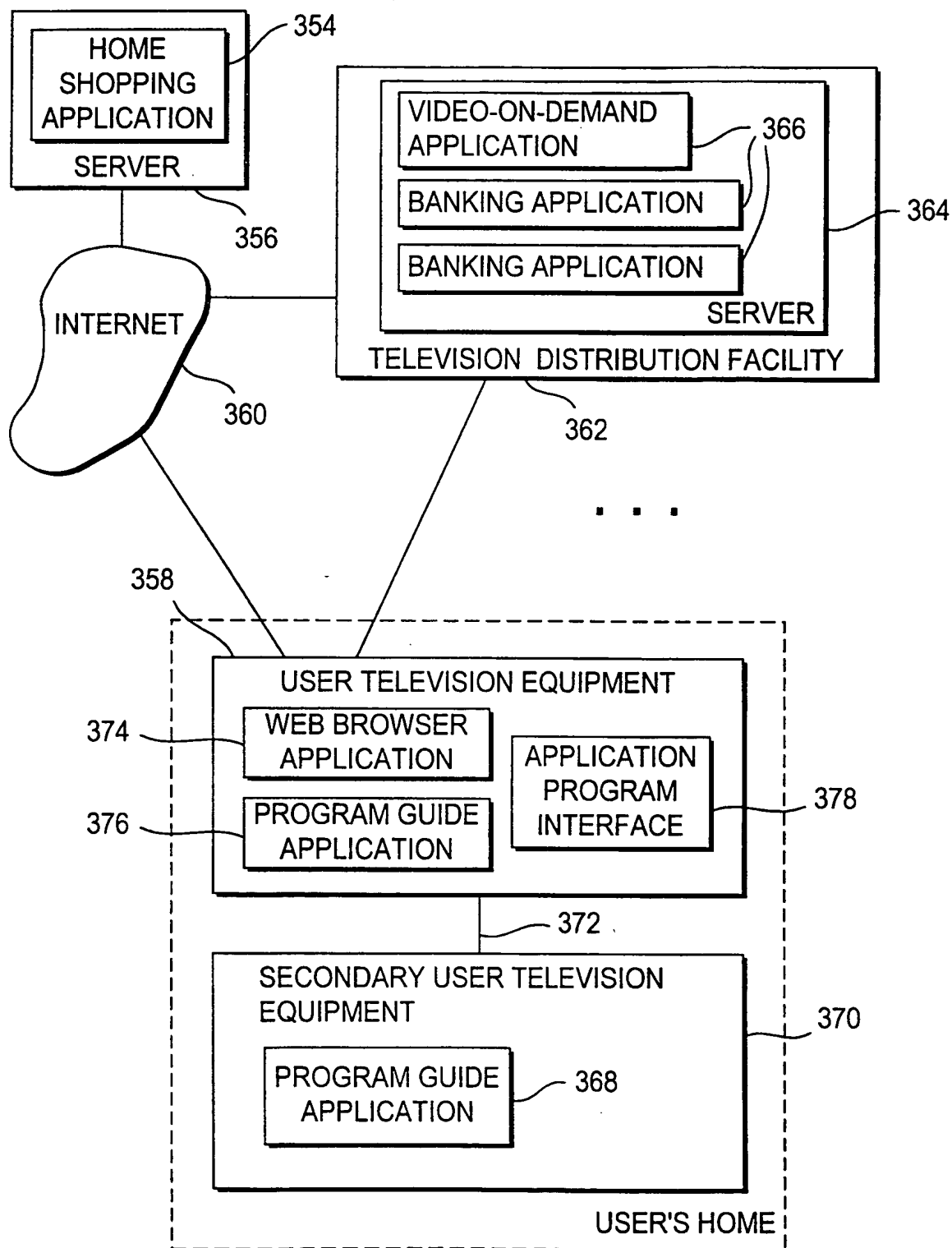


FIG. 32

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/16131

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/16 H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 13368 A (BRIEN SEAN ANDREW O ;MILNES KENNETH ALAN (US); SCHEIN STEVEN MICHA) 10 April 1997 (1997-04-10) the whole document	1-70, 82-123
X	WO 96 41478 A (TV GUIDE ON SCREEN) 19 December 1996 (1996-12-19) page 23, line 31 -page 32, line 10 page 40, line 33 -page 43, line 33 page 55, line 14 -page 60, line 15 figures 6,7,10-30,37-41,48-58 -/--	1-7, 12-24, 29-41, 46-121

☒ Further documents are listed in the continuation of box C.

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X	WO 98 16028 A (MULTIMEDIA SYSTEMS CORP) 16 April 1998 (1998-04-16) page 5, line 22 -page 12, line 12 page 13, line 19 - line 24 page 28, line 24 -page 29, line 18 figure 2 -----	124-126
A	WO 98 17064 A (WESTBERG THOMAS E ;KWOH DANIEL S (US); LEUNG ELSIE Y (US); MANKOVI) 23 April 1998 (1998-04-23) page 3, line 27 -page 14, line 24 figures 1-9 -----	1-126

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/16131

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9713368 A	10-04-1997	AU 7387196 A CA 2232003 A CN 1200221 A EP 0880856 A JP 10512420 T	28-04-1997 10-04-1997 25-11-1998 02-12-1998 24-11-1998
WO 9641478 A	19-12-1996	US 5589892 A AU 700302 B AU 6258596 A CA 2223057 A CN 1190517 A EP 0856227 A JP 11505094 T PL 323914 A	31-12-1996 24-12-1998 30-12-1996 19-12-1996 12-08-1998 05-08-1998 11-05-1999 27-04-1998
WO 9816028 A	16-04-1998	AU 4980497 A	05-05-1998
WO 9817064 A	23-04-1998	AU 4823197 A EP 0932979 A	11-05-1998 04-08-1999



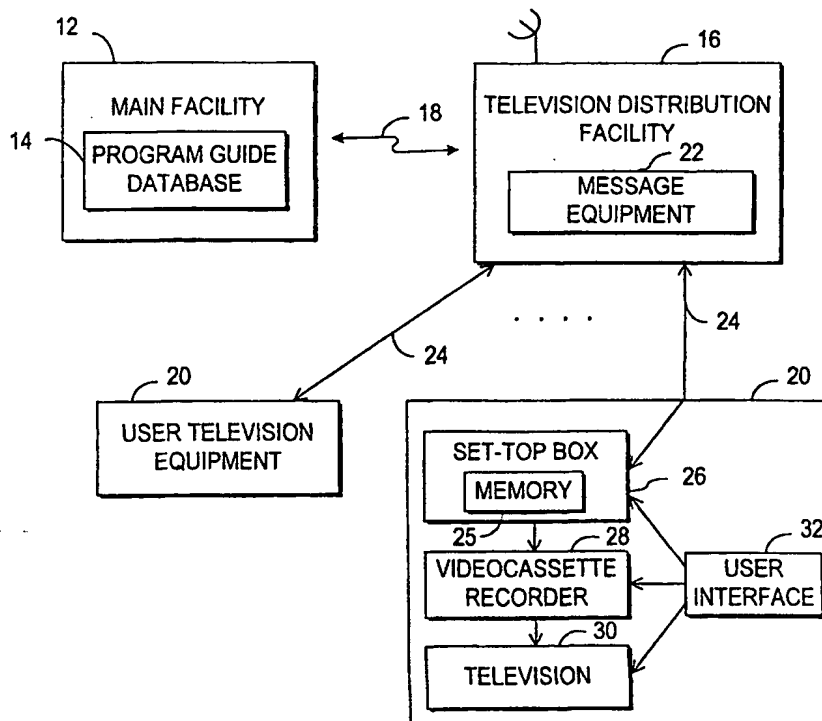
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04N 7/14, 7/173	A2	(11) International Publication Number: WO 00/13415 (43) International Publication Date: 9 March 2000 (09.03.00)
<p>(21) International Application Number: PCT/US99/19541</p> <p>(22) International Filing Date: 26 August 1999 (26.08.99)</p> <p>(30) Priority Data: 60/099,301 26 August 1998 (26.08.98) US 09/356,245 16 July 1999 (16.07.99) US</p> <p>(71) Applicant: UNITED VIDEO PROPERTIES, INC. [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US).</p> <p>(72) Inventors: MCKISSICK, Pamela, L.; 6919 South Columbia Avenue, Tulsa, OK 74136 (US). THOMAS, William, L.; 11611 South 70th East Avenue, Bixby, OK 74008 (US). ELLIS, Michael, D.; 1300 Kingwood Place, Boulder, CO 80304 (US). REGOUBY, Mark, A.; 9627 South 91st East Avenue, Tulsa, OK 74133 (US). HASSELL, Joel, G.; 8246 Yarrow Court, Arvada, CO 80005 (US).</p> <p>(74) Agents: TREYZ, G., Victor et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>Without international search report and to be republished upon receipt of that report.</i></p>	

(54) Title: TELEVISION MESSAGE SYSTEM

(57) Abstract

A television message system is provided that allows users at user television equipment devices that are connected to a television distribution facility to transmit messages to each other relating to a television program or other suitable subject. The television message system permits users to participate in evaluations, contests, promotions, and surveys related to a television program while watching that television program. The television message system also permits users to compose and send a message to a television program entity. Users can send messages through the television message system to users at personal computers who are connected to the user's television distribution facility through a communications network. The television message system also allows a user to purchase a gift related to television programming for a recipient. The gift may be an electronic gift certificate for pay-per-view programming. The television message system may be based on an interactive television program guide or a set-top box application implemented on a set-top box.



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TELEVISION MESSAGE SYSTEM

Background of the Invention

This invention relates to television message systems, and more particularly, to techniques for supporting the transmission of messages in a television environment that may include an interactive television program guide.

A popular aspect of the Internet and other networking environments relates to e-mail messages. A network or Internet user can send e-mail messages to other users of the network or the Internet. Messages are delivered to a server where they are held until downloaded by a client such as a personal computer. The recipient of a message can access it at any time from the server and read it at his convenience.

Television programs are sometimes discussed in e-mail messages. However, there is generally no way in which users of a traditional e-mail message system may easily view a television program while exchanging messages about that program. A user might locate a television in the same room as the user's personal

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computer, but such an arrangement would be awkward to view. Moreover, many households locate their televisions in the living room, but are reluctant to locate their computers in the living room.

5 Although personal computers may be provided with tuner cards that allow television signals to be displayed on the computer monitor, many television viewers would prefer to view television on a traditional television set. Television sets generally
10 offer greater viewing areas than computer monitors, so that users need not sit nearly as close to a television screen as they would a computer monitor. Televisions sets are also typically located in rooms within the home that are more suitable for watching television
15 than where computers are typically located.

A system that attempts to integrate aspects of the Internet with the television viewing experience is available from WebTV Networks, Inc. of Palo Alto, California. The WebTV system permits television
20 viewers to access the Internet through a WebTV Plus Receiver connected to their television sets. The WebTV Plus Receiver enables users to surf the World Wide Web on their television by connecting their televisions to the web-based WebTV Network through a standard phone
25 line. The WebTV System permits users to view television program listings and web sites related to television programs that appear in the program listings.

The WebTV system also provides TV Crossover
30 Links that allow users to access web sites that are related to television programs. The WebTV Plus Receiver detects data such as web links (i.e., universal resource locators (URL)) that is embedded in the video broadcast and notifies users with a TV

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Crossover Link watermark on the television screen. The TV Crossover Links permit users to link to web sites through the Internet related to the television program that the user is watching. The user can view the web
5 site and the television program simultaneously through the WebPIP picture-in-picture function. If the web site supports e-mail features, the user might then send an e-mail message through the Internet while watching a television program. The WebTV system also provides
10 users with e-mail accounts for sending and receiving e-mail through the Internet. A user can access a Web Home page from which he can send and receive e-mail.

Interactive television program guides implemented on set-top boxes allow users to view
15 television program listings on their televisions. Such program guides allow users to view television program listings in different display formats and to perform various other functions. For example, a user may instruct the program guide to display a channel-ordered
20 grid of current program listings. The user may also use the program guide to search for programs in a desired programming category such as sports, movies, news, or the like. If desired, the program guide may be used to order pay-per-view programming.

25 Previously known systems have not provided an integrated system allowing television viewers to view television programming and to exchange messages with other television viewers independent of the Internet. Previously known systems also have not provided
30 television viewers with the opportunity to send messages to exclusively other viewers of a television program or channel. Previously known interactive program guides have not contained a feature that allows

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television viewers to exchange messages with each other.

It is therefore an object of the present invention to provide a television message system that provides a television viewer with an opportunity to view television programming and to exchange messages related to the television programming to other television viewers that does not rely solely on the Internet.

It is also an object of the present invention to provide an interactive television program guide that contains message features.

Summary of the Invention

These and other objects of the invention are accomplished in accordance with the principles of the present invention by providing a television message system that receives television programming over a communications path from a television distribution facility such as a cable system headend. The television message system allows users to transmit messages relating to a given television program to users who are currently watching that television program.

The message system allows messages to be transmitted between users at user television equipment devices. The user television equipment devices may be connected to a television distribution facility (such as a cable system headend) by coaxial cables or other suitable communications paths that carry television signals. In an illustrative configuration, the system eliminates the need for additional communications paths physically separate from the paths that carry

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television signal broadcast channels for the transmission of messages.

The television message system of the present invention permits users to participate in a television program-related contest, promotion, or survey while watching a television program by sending and receiving messages through the television message system. The television message system also permits users to evaluate a television program and send the evaluation to a television program entity such as the TV channel or another user as a recommendation.

The television message system of the present invention permits users to compose and send a message to a television program entity such as the program producers or a program cast member. In addition, users can send messages through the television message system to other users, such as other users of an interactive program guide, Internet users, PC users, etc., who are connected to the user's television distribution facility through a communications network. The messages can be composed by the user, or the messages can be standard messages such as a reminder message to watch a particular program. Message may be composed on an interactive TV screen or on a display remote control device.

The television message system also allows a user to purchase a gift related to television programming for a recipient.

The television message system may be based on an interactive television program guide implemented on the set-top box. If desired, the system may be implemented on other suitable user television equipment such as a satellite receiver, an advanced television receiver (e.g. a high definitive television or HDTV

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receiver), a television into which set-top box circuitry is integrated or the like.

Further features of the present invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

Brief Description of the Drawings

FIG. 1A is a diagram of a television message system in accordance with the present invention.

10 FIG. 1B is a diagram of a user television equipment device having a user interface based on a wireless keyboard in accordance with the present invention.

15 FIG. 1C is a diagram of a television screen keyboard user interface in accordance with the present invention.

FIG. 1D is a diagram of a user interface television display screen providing a list of standard messages or words in accordance with the present invention.

20 FIG. 2A is a diagram of a system configuration in which user television equipment devices of multiple television distribution facilities are connected via a television program entity in accordance with the present invention.

FIG. 2B is a system diagram showing how multiple user television equipment devices may be connected to a television distribution facility and a separate server via neighborhood networks in accordance with the present invention.

30 FIG. 3 is a diagram showing how multiple television distribution facilities and user communications equipment devices may be connected via a

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communications network in accordance with the present invention.

FIG. 4 is a depiction of an illustrative television message system display screen containing a
5 reduced-size version of a television program for providing a user with an opportunity to compose a message and to transmit the message to a television program entity in accordance with the present invention.

10 FIG. 5 is a flow chart showing steps involved in an illustrative approach for providing a user with an opportunity to send a message to a television program entity in accordance with the present invention.

15 FIG. 6A is a depiction of an illustrative television message system display screen for entering user profile information in accordance with the present invention.

20 FIG. 6B is a depiction of an illustrative television message system display screen for entering a user's name and address in accordance with the present invention.

25 FIG. 6C is a depiction of an illustrative address book for users in accordance with the present invention.

FIG. 7 is a depiction of an illustrative television message system display screen for providing a user with an opportunity to evaluate a television program in accordance with the present invention.

30 FIG. 8 is a flow chart showing steps involved in an illustrative approach for providing a user with an opportunity to evaluate a television program in accordance with the present invention.

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FIG. 9 is a depiction of an illustrative television message system display screen for providing the user with an opportunity to participate in a survey relating to television programming in accordance with
5 the present invention.

FIG. 10 is a depiction of an illustrative television display screen for providing the user with an opportunity to participate in a promotion related to a television program in accordance with the present
10 invention.

FIG. 11 is a depiction of an illustrative television message system display screen for providing the user with an opportunity to participate in a contest related to a television program in accordance
15 with the present invention.

FIG. 12 is a flow chart showing steps involved in an illustrative approach for providing a user with an opportunity to participate in a television contest, promotion, or survey in accordance with the
20 present invention.

FIG. 13 is a depiction of an illustrative television display screen for displaying interactive features available for television programs in accordance with the present invention.

FIG. 14 is a depiction of an illustrative television message system display screen for providing a user with an opportunity to send a reminder message to another user in accordance with the present
25 invention.

FIG. 15 is a depiction of an illustrative television message system display screen for displaying a reminder message received from another user in accordance with the present invention.
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FIG. 16 is a flow chart showing steps involved in an illustrative approach for providing a user with an opportunity to create a reminder message to be sent to another user in accordance with the present invention.

FIG. 17 is a depiction of an illustrative television message system display screen for providing a user with an opportunity to send a message to another user in accordance with the present invention.

FIG. 18 is a depiction of an illustrative television message system display screen for displaying a message received by a user in accordance with the present invention.

FIG. 19 is a depiction of a television message system display screen for providing a user with an opportunity to send a message to other users based on television program-related criteria in accordance with the present invention.

FIG. 20 is a flow chart showing steps involved in an illustrative approach for providing a user with an opportunity send a message to other users based upon television program-related criteria in accordance with the present invention.

FIG. 21 is a depiction of an illustrative television message system display screen for providing a user with an opportunity to purchase a television program-related gift for another user in accordance with the present invention.

FIG. 22 is a depiction of an illustrative television message system display screen for providing a user with an opportunity to purchase program-related merchandise in accordance with the present invention.

FIG. 23 is a depiction of an illustrative television message system display screen for providing

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a user with an opportunity to enter gift recipient identity and address information in accordance with the present invention.

FIG. 24 is a flow chart showing steps
5 involved in an illustrative approach for providing a user with an opportunity to purchase a gift through the television message system in accordance with the present invention.

FIG. 25 is a depiction of a display remote
10 control with television messaging features in accordance with the present invention.

Detailed Description of the Preferred Embodiments

An illustrative television message system 10
in accordance with the present invention is shown in
15 FIG. 1A. Main facility 12 may contain a program guide database 14 for storing program guide information such as television program guide listings data, pay-per-view ordering information, etc. Database 14 allows system
20 10 to support an interactive television program guide if desired. Although the television message features of the present invention may be provided using a television message system without a program guide, certain aspects of the invention will be described primarily in the context of an interactive television
25 program guide system configuration for specificity and clarity.

Information from database 14 may be
transmitted to television distribution facility 16 via
communications link 18. Link 18 may be a satellite
30 link, a telephone network link, a fiber optic link, a cable link, a microwave link, a combination of such links, or any other suitable communications path.

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Television distribution facility 16 is a facility for distributing television signals to users, such as a cable system headend. Some aspects of the invention may be implemented using a television
5 distribution facility such as a broadcast distribution facility, or a satellite television distribution facility. Only one television distribution facility 16 is shown in FIG. 1A to avoid over-complicating the drawings. In general, however, main facility 12
10 distributes information to multiple television distribution facilities.

The program guide information transmitted by main facility 12 to television distribution facility 16 includes television program listings data such as
15 program times, channels, titles, descriptions, etc. The information transmitted from main facility 12 may also include information on interactive message features (e.g. television program contests, surveys, evaluations, promotions, etc.) that are available for
20 particular television programs or channels.

If desired, some of the program guide data and other TV message information may be provided using data sources at facilities other than main facility 12. For example, data relating to available television
25 program-specific message features (e.g. a contest, promotion, survey, etc.) may be provided by a television program entity associated with a television channel, or other facility that is separate from main facility 12 and television distribution facility 16.

30 Television distribution facility 16 distributes program guide data and other information to the user television equipment 20 of multiple users via communications paths 24. Communication paths 24 are preferably bidirectional to support messaging and

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preferably have sufficient bandwidth to allow television distribution facility 16 to distribute scheduled television programming, pay programming, messages, and other video and audio information to user television equipment 20 in addition to non-video program guide information and messages. The messages supported by communication paths 24 may be text-based or, if more bandwidth is available, may be audio or video messages. If television distribution facility 16 is a cable system headend, communications paths 24 may be based on coaxial cable or fiber optics or the like. If television distribution facility 16 is a satellite system or broadcast system, unidirectional paths may involve transmitting information in free space. Bidirectional paths may have a free-space downlink to the home and a telephone line or cable or fiber optic return path from the home to the television distribution facility 16.

User television equipment may be based, for example, on a set-top box or other such device. For clarity, many aspects of the invention are described in connection with this illustrative arrangement, although any other suitable hardware arrangement for the user television equipment 20 may be used if desired.

Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to user television equipment devices 20 (including, e.g., set-top boxes 26) via communications paths 24. If each path 24 includes a number of traditional analog television channels, one or more of these channels may be used to support a number of digital channels. The bandwidth of each analog channel that is used to support digital channels may support ten or more of such digital channels. Two-way digital

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channels typically require more bandwidth than one-way digital channels. Such two-way digital channels may support two-way communications in the form of messages between set-top boxes 26 and a server (e.g. at
5 television distribution facility 16). If two-way communications between set-top boxes 26 and television distribution facility 16 involve only text or audio signals, the bandwidth required to support such two-way communications may be substantially less than the
10 bandwidth required to support two-way communications involving video.

Messages may be distributed along communications path 24 using any number of suitable techniques. For example, text messages may be
15 distributed using out-of-band channels on paths 24 using out-of-band modulators. Video or audio messages may be more efficiently transmitted using one or more digital channels on path 24. Such digital channels may also be used for distributing text and graphics. Any
20 suitable communications protocols may be used for sending messages and the like. For example, communications may be analog or digital, synchronous or asynchronous, packet-based, Internet protocol transmissions, etc.

25 Dedicated digital or analog channels, or at least an allocated portion of the available bandwidth in communications paths 24, may be used for the transmission of messages. Such dedicated channels may be separate from the channels used for transmitting
30 television program broadcast signals to the user television equipment.

Because communications paths 24 support transport of messages between user television equipment devices 20 and television distribution facility 16, the

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arrangement of system 10 may eliminate the need for separate telephone lines connected to user television equipment 20 to transmit messages (although such telephone lines may be used with certain aspects of the invention if desired). If desired, television programming may be transmitted to user television equipment 20 along one communications path such as a satellite link from a satellite system, while messages to and from the user are distributed over a second communications path such as a telephone or cable.

Television distribution facility 16 preferably has a server or other suitable computing equipment or audio or video equipment such as audio voice mail equipment (herein collectively referred to as message equipment 22) for supporting the transmission of messages between users. For clarity, certain aspects of the invention are simply described as being implemented using a message server although these aspects of the invention are also applicable to other types of message equipment. The message equipment 22 (e.g., a message server) may be capable of handling messages involving text, graphics, video, or audio data. If desired, the bandwidth requirements of message equipment 22 may be reduced by restricting messages to text, audio, and/or graphics, rather than including video. Message equipment 22 in television distribution facility 16 may be configured in a client-server arrangement in which each piece of user television equipment 20 (i.e., each user television equipment device 20) acts as a client processor.

Each user has a receiver, which is typically a set-top box such as set-top box 26, but which may also be other suitable television equipment into which circuitry similar to set-top box circuitry has been

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integrated. For example, user television equipment 20 may be based on an advanced television receiver such as a high-definition television (HDTV) receiver or other such television-based platform. A set-top box may
5 include a DOCSIS modem for use in two-way communication to and from a server or television distribution facility. For clarity, the present invention will be described primarily in the context of user television equipment 20 that is based on set-top boxes 26. As
10 shown in FIG. 1A, each set-top box 26 may have memory 25. Memory 25 may be used, for example, for maintaining a database of program listings data.

Program guide information may be distributed to set-top boxes 26 continuously (in real-time),
15 periodically, on request (using a client-server arrangement), or using a combination of these techniques. Messages may be distributed to set-top boxes 26 in real-time or on-demand (e.g., when a user checks his e-mail or message equipment 22 and requests
20 a message for viewing). The message equipment may receive messages from set-top boxes 26 in real-time or periodically.

Main facility 12 preferably contains a processor to handle information distribution tasks.
25 Each set-top box 26 preferably contains a processor to handle tasks associated with implementing an interactive television program guide application containing television message features or an independent television messaging application on the
30 set-top box 26 (hereinafter collectively referred to as a television messaging set-top box application or simply a set-top box application). Television distribution facility 16 preferably contains one or more processors (e.g., part of message equipment 22)

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for tasks associated with the distribution of messages and for tasks associated with providing program guide data to the program guide on the set-top boxes.

It should be understood that some or all of
5 the functions of the program guide or the messaging set-top box application hereinafter described may be integrated into an operating system on the set-top box, implemented as a stand-alone application on the set-top box, or performed by a server (e.g. part of message
10 equipment 22 or separate from the television distribution facility). In client server architecture, the set-top box sends data or requests to the server. The server can store and process data and send the results of a request back to the user television
15 equipment for further processing, display, or storage. Any of the functionality of the set-top box application hereinafter described may be implemented using client-server architecture.

Various mechanisms may be used for launching
20 the television messaging set-top box application from a program guide application on the user's set-top box. One mechanism involves using a hot link to launch the television messaging set-top box application. Hot linking involves invoking a non-program-guide
25 application such as television messaging set-top box application with information such as a web site address, e-mail address, program title, or other information that has been preselected based on the current content of the program guide or status of set-
30 top box 26. For example, if the user is watching a program, viewing a program listing, viewing the description of a program, or taking other action within the program guide related to a given program, channel, type of channel, or the like and the user directs the

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program guide to launch a non-program-guide application, the program guide may launch that non-program-guide application and direct that non-program-guide to take an action related to the given program, channel, type of channel, or the like.

Hot links may be activated by dedicated buttons, a launch button, menu options, or any other suitable technique. For example, a remote control may be provided with a dedicated message button, a dedicated shopping button, and similar buttons associated with other non-program-guide applications. When the user presses the message button, the program guide launches the television messaging set-top box application and directs the television messaging set-top box application to set up a message to a character in the program, a fan club, or other message recipient associated with the program. When the user presses a shopping channel button, the program guide launches a shopping application (e.g. for purchasing gifts for recipient users) and directs the program guide to preselect merchandise related to the program. Further features of an illustrative hot linking system are described in Ellis et al. U.S. patent application Serial No. 09/346,134, filed concurrently herewith (Attorney Docket No. UV-85), which is hereby incorporated by reference herein in its entirety.

Each set-top box 26 is typically connected to an optional videocassette recorder 28 or other such recording device so that selected television programs may be recorded. Each videocassette recorder 28 (or set-top box 26) is connected to a television 30. To record a program, set-top box 26 tunes to a particular channel and sends control signals to videocassette recorder 28 (e.g., using an infrared transmitter) that

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direct videocassette recorder 28 to start and stop recording at the appropriate times.

During the use of the television message systems, the television messaging set-top box application on set-top box 26 may display messages on television 30. If the television message system includes an interactive television program guide, the interactive television program guide may display program listings on television 30. A program guide with message features may also be used to display the messages. Each set-top box 26, videocassette recorder 28, and television 30 may be controlled by one or more user interfaces 32 which may involve a remote control, mouse, trackball, microphone, digital video camera, dedicated set of buttons, etc.

As shown in FIG. 1B, user interface 32 may contain a wireless keyboard 34 that sends signals 36 (e.g. infrared signals) to set-top box 38, which is connected to television 40. The user's input may be displayed as part of a television message system display screen on television 40 as the input is entered through wireless keyboard 34. If television message system 10 is based on an interactive television program guide, the display screen provided on television 40 by set-top box 38 may be on an interactive television program guide display screen. The displayed interactive television program guide display screen or other program guide display screens provided by the program guides may contain program listings.

User interface 32 may also be based on a television screen keyboard 50 as illustrated in FIG. 1C. The user can select letters from the displayed alphabet to compose a message 52. In particular, the user may select letters from alphabet keys 54 and

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spaces from space bar 56. The user may select a letter so that it becomes highlighted (such as letter L 58) by pressing arrow keys and an enter key (also called an OK or select key) on a remote control. Pressing the OK
5 key on the remote control directs the program guide containing message features or the independent messaging application to place the selected letter adjacent to cursor 62. The user may select SHIFT option 51 to place a capital letter in message 52. In
10 this way, a user can compose the text of a message.

If desired, the user may compose messages by selecting from a list of standard messages 70 or words 72 displayed in a display screen such as display screen 75, as shown in FIG. 1D. The words or messages may be
15 predetermined, determined by the user, or both. If determined by the user, they may be specifically entered by the user into the list, or they may be automatically saved by the system based on messages previously sent by the user. A word or message can be
20 selected by pressing arrow keys on a remote control to place highlight region 76 on top of a particular word or message such as "message 2" in FIG. 1D. The user can then select the highlighted word or message by pressing a remote control enter (or select or OK) key.

25 System 10 allows users at user television equipment 20 to exchange television program-related messages while watching television. The user may send messages with system 10 without investing the effort involved in operating a personal computer and the
30 software that is associated with it. In addition, system 10 allows users to retain the high video quality and channel range of television viewing while exchanging messages with similarly situated users.

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As shown in FIG. 2A, a television program entity 80 may contain a message server 82 to store messages sent between user television equipment 88, 92, and any other such user television equipment. The television program entity may be a message facility associated with a television channel that receives and processes messages sent by users of user television equipment devices to a television program or channel. User television equipment devices 88 and 92 are connected via communications paths 90 and 94 respectively to television distribution facilities 84 that are in turn connected to television program entity 80 via communication links 86. Communications links 86 may be satellite links, telephone network links, fiber optic links, cable links, microwave links, combinations of such links, or any other suitable communications path.

Messages may be handled on a server that is not located at the television distribution facility as shown in FIG. 2B. For example, messages may be stored on server 91 and transmitted between user television equipment devices 97 and 98 via neighborhood nodes 95 and 96. User television equipment device 97 are connected to neighborhood node 95 via communications path 99, and user television equipment devices 98 are connected to neighborhood node 96 via communications path 101. Neighborhood nodes 95 and 96 decrease the bandwidth requirements on communications paths 103 for a given number of user television equipment devices 97 and 98. Neighborhood nodes 95 and 96 route television programming from television distribution facility 93 to user television equipment 97 and 98. Neighborhood nodes 95 and 96 may also route messages between server 91 and user television equipment 97 and 98.

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Neighborhood nodes 95 and 96 may also route requests to perform many of the message system functions described herein from user television equipment 97 and 98 to server 91. Responses from server 91 are routed back to
5 the appropriate user television equipment device via a neighborhood node.

As shown in FIG. 3, messages can be distributed along communication paths 102 from one user television equipment device 100 associated with
10 television distribution facility 104 to another user television equipment device 100 associated with that facility using a message server 106 located at the facility. The messages sent between two or more user television equipment devices 100 associated with
15 television distribution facility 104 may be stored on message server 106 in television distribution facility 104. An advantage to limiting operation of the message system to individual television distribution facilities is that it allows individual cable system operators
20 (for example) to control their systems, and it does not involve coordinating the transmission of messages related to an on-going television program between different geographical areas or different time zones. If desired, messages exchanged by user television
25 equipment 100 can be stored by a message server 108 that is connected to television distribution facility 104 via communications network 110. Communications network 110 may be any suitable communications network such as the Internet, a public or private telephone
30 network, a network involving satellite link or wireless links, a cable network, etc.

The message system may also be configured so that users at one or more of user television equipment devices 120 may exchange messages with one or more of

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user television equipment devices 100. User television equipment 120 is associated with a different television distribution facility than user television equipment 100. User television equipment devices 120 are
5 connected to television distribution facility 116 via communications paths 122. Message server 118 may be used to store messages. The configuration of message server 118 and user television equipment 120 may be based on a client-server arrangement. Television
10 distribution facilities 104 and 116 may be connected to each other via communications network 110. Messages that are sent between user television equipment 100 and user television equipment 120 may be stored on message servers 106, 108, or 118. If desired, any number of
15 television distribution facilities may be connected together via communications network 110 or other such communications networks to allow user television equipment from these television distribution facilities to exchange messages with each other.

20 In addition, messages may be transmitted between user television equipment 100 or 120 and user communications equipment 114. User communications equipment 114 is connected via communications network 110 to television distribution facilities 104 and 116.
25 User communications equipment devices 114 can be any number of, e.g., personal computers that can send and receive messages.

Another aspect of the present invention involves using the television messaging set-top box
30 application to provide the user with an opportunity to send messages related to a television program or channel which can be sent to certain recipients. Messages transmitted between set-top box application users are sent from one set-top box and stored at a

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message server. The recipient user's set-top box can download the message from the message server after logging onto the message server. Once the message has been downloaded onto the recipient's set-top box, the
5 recipient can review the message using message features provided by the set-top box application. The messages sent in this format may be delayed in the sense that they are not necessarily received by the recipient immediately after they are sent. The messages can be
10 stored on a message server for a long time until recipients access them. Messages may also be sent by a user of a user television equipment device to a television program entity such as a television channel using the television messaging set-top box application.

15 Communications may also be sent between set-top boxes in the form of instant messages. Instant messages are messages that are only stored temporarily at the recipient end. An instant message is available for viewing by a recipient only for a limited period of
20 time after which the message is purged from memory. The message is purged regardless of whether the recipient actually opens the message during the time period it is available. Instant messages are useful for transmitting information that is valid only for a
25 limited period of time. For example, one user may wish to send a message containing the score of a football game to another user in the form of an instant message because the score may change continuously throughout the game.

30 Referring now to FIG. 4, television display screen 130 provides the user with the opportunity compose a human-readable message 132 related to a television program 148. Television message system display screen 130 may allow television program 148 to

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be displayed (e.g., in window 146 of the television screen) concurrently with the interactive message features shown in FIG. 4. Program 148 is reduced in size to fit fully within window 146. Advertisement 149
5 may also be concurrently displayed in display screen 130. Advertisements may accompany any of the display screens or user interface screens of the present invention.

The set-top box application may display
10 screen 130 automatically at an appropriate time while the user is watching a television program 148. The set-top box application may also display screen 130 upon prompting by the user (e.g. when the user presses a message button on the remote control). Information
15 that indicates that the television program has associated message options such as those shown in FIG. 4 may be provided to the set-top box application using any suitable data distribution technique. For example, TV message information may be obtained on-demand by the
20 set-top box from a server or with the program guide listings from the main facility. If desired, TV message information may be encoded digitally in-band with the television program signal on a digital channel. The message information may be decoded by a
25 digital set-top box along with the TV program signal. The TV message information may also be digitally encoded on a digital channel separate from the TV program signal. As another example, TV message information may be maintained at a television
30 distribution facility and distributed to set-top box applications over the vertical blanking interval (VBI) of a standard analog television signal. A VBI decoder located in the set-top box may be used to decode data contained in the VBI of the received television signal.

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TV message information relating to any of the herein described features of the present invention (e.g. surveys, contests, promotions, purchasing merchandise) may be provided to the user using any of the above
5 suitable techniques.

The decoded data may then be used by the set-top box application to determine whether an option exists for the user to send a message to a TV program entity based on the received data. The data decoded
10 by the set-top box also can indicate which message options are available and the return path or destination address to which the messages can be sent (e.g. the e-mail address of a television program entity which is designated to receive and process the messages
15 from the users). If desired, TV message information may be provided using an out-of-band data path. Such information may also be provided as a digital data stream that accompanies other streams of digital data (such as digital data for various television programs).

20 Screen 130 allows the user to send a human-readable message 132 (e.g., a text message or a graphic message containing text) to the TV channel which broadcasts program 148 by selecting option 134, the television program producers of program 148 by
25 selecting option 136, or an individual cast member of program 148 by selecting an option such as option 138 or option 140. Television channels include networks such as ABC, local affiliates, local broadcast stations, pay-per-view channels, cable channels such as
30 HBO and CNN, etc. Once the user of the set-top box application has chosen one or more desired recipients of the message, the user may send the message by selecting send option 142.

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The television message system will then deliver the message to a television program entity such as a television message facility associated with the television channel that is designated to receive

5 messages from users of user television equipment devices. The television program entity will process the messages, and respond to them if necessary. For example, a designated television channel representative at the television program entity may read and respond

10 to messages sent to the television channel. The television program entity who actually receives the message from the user may also be, for example, the personal e-mail address of a cast member or program producer. The user may cancel the message and return

15 to a full screen view of the current program 148 by selecting option 144.

An illustrative process for sending a message to a television program entity recipient is shown in FIG. 5. At step 170, the set-top box application (i.e.

20 the interactive program guide with message features or the stand-alone messaging application) functioning on the user television equipment provides the user with an opportunity to send a message to a television program entity recipient, for example, the television channel,

25 television program producers, or individual television program cast members. The set-top box application may provide the user with an opportunity to indicate a desire to send the message by displaying an interactive screen such as screen 130 (FIG. 4). The interactive

30 screen may be displayed automatically or when the set-top box application is prompted by the user. The interactive screen may provide the user with an opportunity to enter the text of a message and designate the intended recipients of the intended

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message. If desired, the recipients of the message may be preselected if there is only one potential recipient of the message. The user may then enter the message information. The message information may include the
5 text of the message and may include the designated recipients.

At step 172, the television message system sends the message to a message server associated with the television program entity which is designated to
10 receive and process messages relating to the television program, or channel. The set-top box application may obtain the information necessary to forward the message to a television program entity (e.g. the recipient's destination address) from the program guide information
15 obtained from the main facility or from data associated with a television program (e.g., data embedded in the VBI of the television program signal). The destination address may be an e-mail address or other information identifying a location where electronic messages may be
20 sent. The destination address may also be stored at the television distribution facility. In this case, the set-top box application may forward the message to the television distribution facility, which would then forward the message to its destination.

25 The television messaging set-top box application may also present the user with the option of entering profile information data for users in the user's household. An illustrative television messaging system display screen 420 that the television messaging
30 set-top box application may present on a user's television set to enter user profile information is shown in FIG. 6A. The names of users may be entered in box 422. That user's favorite programs may be selected from a pull down or expandable list 425. Additional

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programs in the pull down list can be displayed on television messaging system display screen 420 if the user selects arrow 426. The user's favorite categories of programs such as sports programs, movies, news
5 segments, sitcoms, etc. may also be selected from pull down list 432. The user can select arrow 438 so that additional categories of programs may be displayed. The user's favorite channels may be selected from a pull down list 430. The user can select arrow 428 so
10 that additional channels may be displayed on the user's television display screen. Information about the user that is not related to TV programs may also be entered as part of the user's profile (e.g. birth date, place of residence, age, etc.). The user may enter his city
15 and state of residence in regions 441 and 443 of screen 420.

Television display screen 420 may also provide the user with an opportunity to filter the messages that are sent to that user. The user may
20 specify that all incoming messages are to be blocked, except for those other users whom the user identifies in box 435. Alternatively, the user may specify that only messages from certain recipients should be blocked. The user may identify these recipients in box
25 437. The filtering function may be performed by the set-top box or by the message equipment. The set-top box or the server checks all the incoming messages and does not accept messages from the blocked recipients.

A user may select OK option 436 when he has
30 finished entering user profile information. The data entered is preferably stored in the set-top box, but may be stored at a remote server or elsewhere in the hardware of the user television equipment device such as a separate storage unit connected to the set-top

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box. The user may select cancel option 439 to exit display screen 420. User profile information will not be saved if the user selects cancel option 439.

Further features of an illustrative system for entering
5 user profile information are described in Ellis et al. U.S. patent application Serial No. 09/034,934 filed June 11, 1999, which is hereby incorporated by reference herein in its entirety.

In addition, the message system may be
10 configured similar to the ICQ system so that a user may make his profile information public so that it can be accessed by other users. ICQ is an Internet tool that informs Internet user's who is on-line at any time and enables users to contact them at will. ICQ can search
15 for an individuals on-line and alert a user when they log on. ICQ allows a user to chat, send messages, files, URL's, play games, or just hang out with fellow Internet users while surfing the Internet.

A user may fill out a questionnaire through
20 the message system which includes information regarding the user's television program preferences as well as additional non-television related information about himself such as his hobbies (e.g. using display screen 420). The user profile information may be useful for
25 finding other users who are interested in exchanging messages relating to certain topics. The user profile information may be stored at a remote server or jointly on the set-top boxes. A user may access profiles which have been made public and form a "buddy list" or
30 address book of other users who have the same interests. The buddy list can include a user's identity, TV preferences, and other interests.

The message system may be set up so that a user must obtain permission from a second user before

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he is able to obtain the second user's profile information. For example, the message system may send the second user a message indicating the first user has requested the second user's profile information. If
5 the second user accepts the request, the message system allows the first user to add the second user to his buddy list so that he can have access to the second user's profile information. In addition, the message system may ask the second user if he wishes to add the
10 first user to his buddy list. A user may add further information to the profile based on his knowledge of the other user's preferences. The message system may also allow users to search for other users based on an ICQ number, an e-mail address, TV program preferences,
15 and/or other preferences.

An illustrative television messaging system display screen 421 that the television messaging set-top box application may present on a user's television set to enter user identity information is shown in FIG.
20 6B. Television messaging system display screen 421 in FIG. 6B provides the user of the user television equipment with an opportunity to enter a user's name in box 423, and a user's address in box 427. Identities for users of user television equipment devices and user
25 communications equipment devices may be entered in display screen 421. For example, an e-mail address may be entered in box 427 for users of user communications equipment. A user of a user television equipment device may have an address which is a unique identifier
30 assigned to a particular user allowing a message server to restrict access to a message only to the proper recipient. The address for the user of a user television equipment may be entered in box 427.

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When the user selects OK option 429, the set-top box application will save the user identity information (i.e. the user's name and address) in a memory device such as memory 25 in FIG. 1A. The user
5 identity information may also be stored at a server instead of a set-top box. When the user selects cancel option 431, the set-top box application will exit display screen 421 and will not save any information the user has entered in boxes 423 and 427. The user
10 selects option 433 if the user wishes to add the user identity entered in boxes 423 and 427 to a group of identities that will appear as a single entry in an address book, such as "Hockey Fans" in address book 440 shown in FIG. 6C. The identity group feature allows
15 the user to compile a list of the identities of friends who enjoy watching the same television program, channel, or category of programs into a group. The user can then send a message to everyone in that group while watching a television program that everyone in
20 the group is interested in by selecting that group in the address book. The members of the group of identities will receive the message on their set-top box and will be able to read it while they are watching the same television program as the sender of the
25 message.

The identities of users whose identity information has been entered in display screen 421 of FIG. 6B may be displayed by the set-top box application in an address book format on the television screen.
30 The television messaging system display screen shown in FIG. 6C is an example of such an address book. Address book display screen 440 displays a list of identities 442 of users or groups of users. The users can be individuals such as Mary Smith, or groups of

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individuals such as Hockey Fans as illustrated by the names in the list 442. An individual user may be part of more than one group in the address book. For example, Mary Smith may appear in the address book as
5 an individual, and be a member of the groups "Seinfeld Fans" and "Movie Lovers." List 442 may contain groups of individuals who are interested in a particular program, type of program, or any other group identified by the user such as "Hockey Fans," "Members of Hiking
10 Club," "Seinfeld Fan Club," or "Movie Lovers." The groups need not be TV-related. If desired, the set-top box application may present a pop-up option on the television screen to send a message to the individuals in a list in the address book when the user is watching
15 a related television program (e.g. Seinfeld).

The user may select a recipient or recipients of a message, recommendation, gift, reminder, etc., by selecting an identity or identities in the list. Option 444 is highlighted to indicate that the user has
20 selected "Seinfeld Fans" to be a recipient of a message. The user may select as many recipients of the message as he desires from the names in the list. The user may choose to enter additional identities of other users by selecting option 446 which returns the user to
25 television display screen 421 in FIG. 6B.

When the user has selected the recipients of the message (e.g., using arrow keys and pressing enter), the user may then position the highlight region on OK option 448 and press enter. The television
30 messaging set-top box application may then retrieve the addresses for each recipient of the message. The television message system may then deliver the message to the appropriate message equipment for each of the

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recipients. The user may select option 450 to cancel and exit from the address book display screen 440.

Referring now to FIG. 7, television display screen 180 allows a user of user television equipment
5 to evaluate the television program that the user is viewing. The user can select one of options 182, 184, 186, and 188 to evaluate the program displayed in window 198. The television program is concurrently displayed in window 198 to assist the user in
10 evaluating the program. Advertisement 197 may also be displayed on screen 180. The user can augment the evaluation by entering additional text comments in box 190 that may be distributed to recipients with the program evaluation. The user can select who the
15 program evaluation will be sent to. The user can send the program evaluation to a television program entity such as the TV channel that broadcasts the television program (or an associated entity that compiles TV program data for the TV channel) by selecting option
20 192. An evaluation may include a simple score such as "good" or "bad," and it may include textual commentary.

The user can select option 194 to send the evaluation to other users of user television equipment as a recommendation to watch or not watch the
25 particular program. The set-top box application will then display a user address book such as display screen 440 so the user can choose the desired recipients of the recommendation. The user may then select send option 199 to send the evaluation to the designated
30 recipients. The set-top box application includes the identity of the TV program along with the evaluation or recommendation message. The television message system may then forward the evaluation to the destination addresses of the television program entity obtained

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from the program guide information or from data associated with the program. The television message system may transmit the recommendation to message equipment (e.g. server) for access by the recipient
5 users of user television equipment. The communications paths in FIGS. 1A, 2A, 2B, and 3 illustrate the types of paths that may be used with these processes. Evaluations collected by this system from users may then be transmitted to the set-top box application and
10 displayed in a variety of formats. For example, an interactive TV display screen may indicate that 37% of the viewers gave the program 4 stars, 46% gave it three stars, 10% gave it 2 stars, and 7% gave it 1 star.

An illustrative process for sending a
15 television program evaluation or recommendation to a recipient is shown in FIG. 8. At step 220, the television messaging set-top box application functioning on the user television equipment provides the user with an opportunity to evaluate a television
20 program. The set-top box application may provide an opportunity to evaluate a program by displaying an interactive television display screen such as display screen 180 in FIG. 7. If desired, the set-top box application may provide the user with an opportunity to
25 evaluate a program by pressing buttons on his remote control. The user may then enter program evaluation or recommendation information for the television program following the options or instructions displayed on the user's television.

30 At step 224, the television message system delivers the evaluation or recommendation to the destination address or return path. If the address information is not known, the evaluation or recommendation may be transmitted to a return path

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which may be, for example, the user's television distribution facility. If the television distribution facility has sufficient information, the television distribution facility may forward the evaluation or
5 recommendation to the appropriate destination.

The television messaging system of the present invention may also provide a fast and efficient way to gather ratings for television programs. A TV program rating is an estimate of the number of people
10 who are watching a television program based on a survey of a selected group of people. In the television messaging system of the present invention, each set-top box connected to a given television distribution facility may send a message to the TV channel or an
15 associated entity indicating whether the user is watching the current television program. A rating may be determined from this data if the sampling is taken from a large enough group. This system provides television channels and ratings services with a way in
20 which to gather up-to-the-minute ratings on television programs from users who are currently watching the programs.

As shown in FIG. 9, television messaging display screen 230 may be used to provide the user with
25 an opportunity to participate in a survey relating to television programming (e.g. a particular television program or a group of television programs). Television messaging system display screen 230 may provide a user with an opportunity to enter answers to questions 1 and
30 2 by selecting one or more of options 232a-c and 234a-d respectively. The set-top box application may obtain the survey questions and the return path from the program guide information transmitted from the main facility. Alternatively, some of this information may

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be encoded into the television messaging set-top box application. Advertisement 235 may be displayed on screen 230 with the survey questions.

If desired, the survey questions and return
5 path (or destination address) may be encoded digitally in-band with the television program signal on a digital channel, provided in the VBI signal, or otherwise provided as data associated with the television
program. The set-top box application functioning on
10 the user television equipment may then decode the survey data from the program signal or other associated path, and indicate the availability of the survey option on a program listings menu in an interactive format so that the user may access the survey (see,
15 e.g., FIG. 13).

The user may answer an additional set of survey questions by choosing option 236. The user can send the responses he has given to the survey questions by choosing option 238. The television message system
20 will then deliver the survey answers as a survey message to the return path or destination address (e.g., a television program entity such as a television channel survey center) for processing. The user can cancel and return to a menu or to a television program
25 by choosing cancel option 240. If desired, the television messaging set-top box application may provide the user with inducements for completing a survey, such as a chance to win a free month of programming or the like.

30 As shown in FIG. 10, a television messaging system display screen 250 may provide the user with an opportunity to participate in a promotion related to television programming. The television channel that broadcasts a television program may be offering a

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promotional drawing as shown in FIG. 10. A reduced-sized image of the television program is displayed in window 256. An advertisement is displayed in region 255. The user can enter the drawing by selecting

5 option 252 or may decline by selecting option 254. If the user selects option 252, the television message system will forward a promotion message to the return path or destination address of the television program entity that is handling the promotion (e.g. the

10 television channel or an associated facility) so that the user will be entered in the drawing. The promotion message may include the user's name and address.

The television message system will then deliver the message to a television program entity

15 associated with the television channel that broadcasts program 256 for processing. The return path or destination address of a television program entity and the other promotion information displayed on screen 250 may be obtained using any suitable technique including

20 encoding it digitally in-band with the television program signal on a digital channel, embedding it in the program signal VBI, otherwise providing it as data associated with the program, or downloading it to the set-top box 26 from a server or the main facility 16

25 (FIG. 1A). Television message display screen 250 may request that the user enter his name and address and demographic information such as the user's programming preferences if the user decides to enter the drawing. The television program entity can then send additional

30 promotional information to the user based on the user's interests. The television program entity (e.g. the television channel) selects a winner from the pool of users who have entered the drawing. The winner may be announced at the end of the program. This promotion

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technique permits users of user television equipment devices to participate in promotions simply and easily without leaving their living rooms. A television program promotion will encourage users to watch the
5 program and thereby increase ratings.

Referring now to FIG. 11, the television message system may provide a user of user television equipment with an opportunity to participate in a television program contest. The program "Jeopardy for
10 Home Viewers" may be vertically compressed to fit in the upper half screen, may be truncated by overlaying instructions on its lower half, or may be displayed using any other suitable arrangement. In any case, at least a portion of the program is visible to the user
15 in upper portion 411 of screen 410. A contest user interface 416 is simultaneously displayed in the lower portion of television display screen 410. This format allows a user to view a television program and participate in a contest at the same time. While a
20 user is listening to questions being asked on the program "Jeopardy for Home Viewers," he can enter answers to the questions in box 412. The questions can also be displayed in the contest user interface 416 portion of screen 410. When the user is satisfied with
25 his answer he can send it as a contest message to the return path or destination address by choosing option 414 or by pressing Enter on his remote control. The return path or destination address of the television program entity that receives the contest answers may be
30 the television program broadcast facility that broadcasts the television program. An advertisement may be displayed in region 415.

The contest questions and other contest information (e.g., the return path) may be encoded

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digitally in-band with the television program signal on a digital channel, embedded in the VBI of the television program signal, or may be provided as other associated data or may be transmitted from a server to the set-top box over a separate channel. These arrangements allow contest information (such as contest questions) and the program signal to be continuously received by the set-top box during the course of a program. The contest information that appears on the interface screen 416 may be updated as it is received on the set-top box. Because the set-top box is receiving the television program signal for the TV program and the contest information concurrently, display screen 416 may be synchronized with the action occurring in the program as it unfolds. The winners of the contest can be determined immediately and may be announced during the course of the program. This aspect of the present invention allows television channels to implement interactive television programming for their users.

An illustrative process for allowing a user to participate in a contest, promotion, or survey is shown in FIG. 12. At step 400, the set-top box application functioning on the user television equipment provides the user with an opportunity to enter survey, promotion, or contest information. This opportunity may be provided in the form of display screens such as display screens 230, 250, and 410 of FIGS. 9, 10, and 11, respectively. The user may enter appropriate survey, promotion, or contest information following the on-screen prompts provided in the display screens. At step 402, the television message system delivers the survey, promotion, or contest information to the return path or destination address for

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processing. If desired, step 402 may involve the step of using the television message system to transmit the message to the television distribution facility so that the message can be transmitted to the appropriate
5 destination (e.g. a television program entity).

As shown in FIG. 13, program guide listings that are received by the set-top box from the program guide database at the main facility may indicate which television programs have interactive user message
10 features available (e.g., a evaluation, contest, promotion, or survey feature). Television message system display screen 150 allows users to view which messaging features are available with respect to television programs that are being aired in a given
15 time slot.

The user may enter a time slot in box 164 or otherwise select a time slot of interest. The set-top box application then displays program listings in column 154 for programs that are scheduled to be
20 broadcast at the time indicated in box 164 on the channel in column 152. The messaging features available with respect to a given program are displayed by the set-top box application in column 156. For example, the program Wheel of Fortune is offering a
25 contest which a user can participate in. The user can highlight contest option 162 and press enter on his remote control to enter the Wheel of Fortune contest. The I icon in circle 158 indicates that the channel has provided more information with respect to the Wheel of
30 Fortune contest which the user may be interested in reading before entering the contest. The set-top box application may provide the user with an opportunity to review this information before the user is entered into the contest. Also, the user may simply view the

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program Wheel of Fortune by highlighting the Wheel of Fortune option 155 and pressing enter on the remote control. The user can scroll up or down to view the program listings and messaging features for more
5 programs and channels as indicated by arrows 160. An advertisement may be displayed on screen 150 such as the one in region 157.

The features described with respect to FIG. 13 may be provided for in any format of listings. For
10 example, the TV message system may provide a list of all of the message features for programs airing on a selected TV channel. The TV message system may also allow a user to search for programs by category or alphabetically, and list associated message features
15 for each program. If desired, TV messaging features may be provided on a program information screen which allows a user to access multiple features related to the program, including the messaging features described in this application.

20 Another aspect of the present invention relates to the ability of the television message system to transmit reminder messages between users. Reminder messages are messages that are sent by one user to another user to remind the other user to watch a
25 particular television program. Television message system display screen 260 of FIG. 14 is an example of a user interface that permits the user to send a reminder message to the set-top box of another user. A user may get to information screen 260 by selecting a program in
30 the program guide listings and then pressing the "info" button on the remote control. The program guide listings contain information on programs that are currently airing on all available channels as well as programs that will be broadcast at future times.

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Information regarding the program selected in the listings is displayed in region 262 of information screen 260. The user can set a reminder for himself to watch the selected program by selecting option 264.

- 5 The user can send a reminder to another user of a user television equipment device by selecting option 266. After the user selects option 266, pop-up region 276 appears in information screen 260. The user enters the recipient user's address information in region 270.
- 10 The location address may include a unique code identifying the user and the message server from which the recipient user can receive messages. The user may also choose the recipient's identity from the address book by choosing option 272. More than one recipient
- 15 may be entered. After the user has chosen a recipient, the user selects Done option 274. The reminder message is now transmitted to the recipient(s). An advertisement may also be displayed in region 275.

- A reminder message may also be sent to a user
- 20 of a user television equipment device from a web site that has program listings and that supports the transmittal of reminder messages such as www.tvguide.com. An Internet user may select a program from the listings displayed on the web site and enter
- 25 the address of the recipient user. The web site transmits the reminder message to the recipient via a server.

- Referring now to FIG. 15, television display screen 280 shows how a reminder message that has been
- 30 sent by one user and received on the set-top box of another user may be displayed. The recipient's set-top box application displays the reminder message a short time (e.g., 10 minutes) before the program that is related to the reminder is to air, regardless of the

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time that the set-top box receives the reminder message. If desired, the reminder message may be displayed at other times or more than once. For example, the reminder may be displayed when the user
5 first turns on the television set within a twelve hour interval before the program airs. The set-top box application may also display the reminder the first time that the user turns on the television after the set-top box has received the reminder message. These
10 methods help ensure that the user will see the reminder even if he is not watching television a short time before the program airs.

The illustrative reminder message 282 of FIG. 15 is displayed as a relatively small overlay on
15 television display screen 280 so as to interrupt the user's viewing of program 284 as little as possible. The video of program 284 may instead be shrunk so that so that none of it is obscured by the reminder message. The reminder message 282 indicates to the user that the
20 program "Oprah" will air on ABC at 4 p.m. The user can accept the reminder message by selecting OK option 286, in which case the set-top box application will tune to the channel that corresponds to the local ABC affiliate.

25 Reminder messages can also be sent across time zones or local broadcast areas. When a set-top box receives a reminder message, it will search through the program guide listings to determine when the program will be broadcast in the user's time zone or
30 local area. The set-top box application then displays the reminder message on the television screen at an appropriate time before the program airs. The user may decline the reminder message by selecting cancel option 288 causing the message to disappear from the TV

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screen. The identity of the sender of the reminder message is displayed in region 283. If the set-top box application does not recognize the sender, then the sender's address or web site may be displayed in region 5 283. Displaying the sender's identity is useful for allowing the user to block that sender's reminders in the future. An advertisement may be displayed in region 285 of reminder 282 as shown in FIG. 15. If desired, multiple reminder messages may be displayed on 10 a single overlay. The overlay may include both reminders set by the user, as well as, reminders sent by other users.

The television message system may provide the user with an opportunity to block all future reminder 15 messages from a specific sender or all senders. When a reminder message is displayed to the user, it may include an option to block all future reminder messages from all senders such as option 287. The reminder message may also include an option such as option 289 20 which allows the user to block all future reminder messages from the user who has sent the current reminder. The reminder message may additionally include option 281 which configures the message system so that all reminder messages are blocked except 25 reminders from the sender of the current reminder. These blocking features may be implemented to block other types of messages received on the set-top box. The filtering and blocking functions herein described may be performed at the set-top box of the recipient, 30 at a remote server, or at the television distribution facility.

An illustrative process for allowing a user of user television equipment to send a reminder to another user of user television equipment is shown in

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FIG. 16. At step 290, the set-top box application functioning on a user's television equipment provides the user with an opportunity to send a reminder message for a recipient user at a remote set-top box. The set-top box application can provide the user with an opportunity to send a reminder by using an interactive display screen such as television message system display screen 260 of FIG. 14. The user may enter reminder information such as the recipient user's address and the television program information. At step 294, the television message system may send the reminder to the recipient user's message server for subsequent downloading by the recipient user's user television equipment device.

Another aspect of the present invention relates to sending and receiving text, audio, or video messages between other users of user television equipment and users of communications equipment (e.g., Internet users, users of personal computers, etc.). The messages are similar to electronic mail (e-mail) in that they are stored on a message server and can be downloaded onto the recipient's set-top box by the set-top box application at any time. The user television equipment devices may communicate with the message server using any suitable network including the ones shown and described with respect to FIGS. 1A, 2A, 2B, and 3. Messages can be sent to a user's Internet service provider mail server for subsequent downloading by a user's computer. The television message system may also allow users to send program guide information such as TV program listings, program schedules, and program information as a message to other users.

As shown in FIG. 17, the set-top box application may provide a user of user television

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equipment with an opportunity to send a message to another user through a user interface such as television message system display screen 300. Television message system display screen 300 may be
5 displayed by the set-top box application on the television when requested by the user (e.g., when the user presses a message button on his remote control). Television display screen 300 allows a user to compose a message and to send it to another user of user
10 television equipment or a user of communications equipment.

The user can compose the text of the message in box 308 using a wireless keyboard such as the one shown in FIG. 1B. If desired, the user can compose a
15 text message using a television screen keyboard such as the one shown in FIG. 1C or by choosing from a list of standard messages or words as shown, e.g., in FIG. 1D. The message sent by the user can relate to the television program that is displayed in window 304.
20 For example, the message "Nice play!" relates to a television program such as football game that the user is watching in window 304. If desired, a user of user television equipment may send an audio message similar to a voice mail message using the set-top box
25 application to another user by speaking into a microphone connected to the set-top box. A user may even send a picture or a video recording of himself (with or without the audio message) through the set-top box application using a camera that can communicate
30 with the set-top box so that the recipient can watch a video recording of the sender on his television set.

The user may enter the recipient's name or address in box 302. In FIG. 17, the name Bob has been entered in box 302. The set-top box application will

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match the name Bob with an address previously entered by the user in the set-top box application address book. An e-mail address can also be entered in box 302 for Internet user recipients of a message. The user
5 can designate the message as an instant message by selecting option 303 or a saved message by selecting option 305. An instant message is erased from memory at the recipient end after a short period of time, while a saved message is stored indefinitely in memory
10 at the recipient end. The message in box 308 is only relevant for a short period of time during the course of the program. Therefore, the user may wish to designate it as an instant message.

The user may also send an audio message by
15 selecting option 307 or a video message by selecting option 309. The user can compose an audio message by speaking into a microphone connected to the set-top box or by sending an audio clip from a program. The user can compose a video message using a video camera, a
20 VCR, or by using video clips or video stills from a TV program. The video may be recorded using a local storage device (e.g. in the set-top box) or at a server. The user may also send video clips from a server-based library. The user may also send program
25 guide information to another user as part or all of the message by selecting option 311. The program guide information may be a brief description of the program in window 304, a portion of the program guide listings, or a TV program or channel schedule. The user can send
30 the message to the recipients by selecting send option 306. The user can cancel the message by selecting cancel option 310 and return to a set-top box application menu or a full screen view of the current

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television program. An advertisement may be displayed in region 301 of screen 300.

As shown in FIG. 18, if the recipient of a message is a user of user television equipment, the recipient's set-top box application may display the message on the television screen some time after it is received by the set-top box. The set-top box application can periodically access all messages that are intended for the user from a message server and download them onto the set-top box. The message server can communicate with the user television equipment devices using any suitable configuration including the ones shown in FIGS. 1A, 2A, 2B, and 3.

Television display screen 320 is an example of how the message can be displayed. The message may be received by the user's set-top box 26 and stored in memory 25 (FIG. 1A). The set-top box application may then display the message on the user's television screen (i.e., on television 30 of FIG. 1) preferably in a way that interrupts the user's viewing of program 330 as little as possible. The message should, however, be large enough so that the user may read it. In FIG. 18, the set-top box application displays message 324 in window 322 in the lower left corner of display screen 320 while the user is watching television program 330.

If desired, the set-top box application may display an icon such as a small mailbox in the corner of the television screen or turn on a light on the front panel of the set-top box to indicate to the user that a message from another user has been received. The user may then access the content of the message by pressing a designated button on the remote control. The message may be displayed in a corner of the screen as shown in FIG. 18 or in a full screen view.

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Window 322 displays the content of the message 324, and the sender of the message. If the set-top box application does not recognize the sender or the sender's name is not provided as part of the message, the set-top box application may display the sender's path or address instead. Message 324 may contain an advertisement or other information that the set-top box application or message server appends to it. In FIG. 18, the current score of the NFL game is attached to message 324 in region 325. Message 324 may also contain a title which may be entered by the sender or an additional advertisement. Window 322 provides the user with an opportunity to reply to the message by choosing reply option 326 or to clear the message from the screen by choosing clear option 328. If the user chooses to reply to the message, the set-top box application can take the user to an interactive screen such as screen 300 of FIG. 17, so the user can compose a reply message. The user may block future messages received from the sender by selecting option 321. The sender's address is then stored locally or at the message server so that future messages from this address are filtered out.

As shown in FIG. 19, the television message system may allow a user of user television equipment to transmit a message to another user of user television equipment who is chosen based on television-program-related criteria. The set-top box application may provide the user with an opportunity to select the program-related criteria to use in sending messages to the recipients using a user interface such as television message system display screen 200. The criteria may be other users of user television equipment who are currently watching a particular

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television program (e.g., the current television program) (option 202), other users who are interested in a particular program (e.g., the current television program) (option 204), other users who are interested
5 in the same channel (e.g., the same channel as that on which the current television program is being broadcast) (option 206), or other users who are interested in the same category of programs (e.g., the same category as the current program) (option 208).

10 The set-top box application may determine the current program by accessing the database of program listings information stored in memory 25 or on a remote server. The set-top box application may also determine the current program by accessing a database (e.g., a
15 program listings database stored locally on the set-top box or on a server) and using information on the current time (e.g. which the set-top box or server has access to using a clock), and the current channel (known from the state of the tuner in set-top box 26).

20 The recipients of the message may be selected in a variety of ways. For example, the set-top box application may allow the user to view the names of other users in the address book and to filter out only those other users who have an interest in the same
25 program, channel, etc. by selecting option 210. The message would only be sent to the other users with appropriate interests (as determined by the user). If desired, user addresses may be provided with information identifying their interests. The set-top
30 box application may then automatically search for users in the address book who have interests that match the current program, current channel, or category of the current program (options 204, 206, and 208). Users interested in a category of programs may be identified

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in a group stored in the address book such as "Movie Lovers" or "Monday Night Football Fans," as shown in FIG. 6C. These address book groups may be selected via option 208. Users interested in a particular program
5 may be identified in a group stored in the address book such as "Seinfeld Fans," as shown in FIG. 6C. These groups may be selected using option 204. If desired, a message may be sent to particular people, entities, or groups that the user individually chooses from his
10 address book without regard to their interests with option 210. In any case, the television message system may transmit messages to a message server until it is accessed by the recipient.

If desired, the television message system can
15 deliver a message related to a given program to a particular message server with an indication that the message is intended for receipt by current viewers of the given program, users interested in the program, users interested in the channel of the program, or
20 users interested in the category of the program. The message server may group the message with other messages relating to the given program, channel, or category. The message server then may allow any user's set-top box application to access all the messages for
25 the programs, channels, or categories that the user at that set-top box is interested in or is currently viewing. Any other users who wish to access messages relating to a program, channel, or category of programs can download those messages from the message server
30 onto their set-top boxes so that they can be read on a television set.

A user can indicate to his set-top box application that he wishes to access messages relating to a program he is currently watching by, for example,

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pressing a message button on his remote control. In a program guide, a user can access messages relating to any program he is interested in by highlighting a program listing for that program in a program guide and pressing the message button on his remote control or by choosing a program guide menu option. The set-top box application may provide the user with an opportunity to access messages relating to specific channels, or categories of programs in a similar fashion. Messages may be download from the message server by the set-top box application onto the set-top box for viewing by the user. The set-top box application may display the messages in a list format by sender, topic of message, etc. The user may then choose the messages he wants to read from the list.

An illustrative process for transmitting a message composed by a user of user television equipment to other users of user television equipment that were selected based upon television program-related criteria is shown in FIG. 20. At step 340, the television messaging set-top box application functioning on the user television equipment provides the user with an opportunity to send a message to other users based upon television-program-related criteria. The set-top box application may provide this opportunity by displaying a user interface such as television message system display screen 200. The message to be sent may be, for example, a recommendation to watch a program. The message may be entered into the set-top box application using, for example, display screen 180 in FIG. 7. If desired, the message may relate to the context of a program entered using, for example, television message system display screen 300 of FIG. 17. The user may choose recipients for a message from the options

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provided by, for example, television message system display screen 200 of FIG. 19. At step 342, the television message system transmits the message to a message server for access by the recipient users.

5 The set-top box application may provide the user with an opportunity to send a gift to another user of user television equipment or a user of communications equipment (e.g., an Internet user). As shown in FIG. 21, a television message system display
10 screen 350 may be used to allow the users to scroll through television program listings 352 to find a particular television program. The program listings may be organized by broadcast time and by channel. The program guide listings may include pay-per-view
15 channels such as PPV1 and PPV2. The user may be provided with an option to purchase a pay-per-view program such as "Titanic" on channel PPV1. Option 364 is highlighted to indicate that the user has selected "Titanic."

20 Television message system display screen 350 may display the gift options that are available for a particular program that the user has selected from the program listings. Information regarding which gift options are available for a particular channel or
25 program may be part of the program guide information that the set-top box receives from the main facility, encoded digitally in-band with the television program signal on a digital channel, provided in the VBI signal, or otherwise provided as data associated with
30 the television program. If gift options are available for "Titanic," the set-top box application will display the gift options such as gift options 354, 356, and 358 that are available for the program that the user has chosen. Gift option 354 allows the user to purchase

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program merchandise for another user. Gift option 356 allows the user to purchase a pay-per-view program for another user to watch, such as "Titanic" on PPV1. Gift option 358 allows the user to purchase a gift

5 certificate for program merchandise, a pay-per-view program viewing coupon, etc. The user may enter the identity of the recipient of the gift by choosing option 360. Gift information relating to a TV program may also be provided for a specific program on a

10 program information screen that a user can access by highlighting the program in the listings grid and then pressing an "info" button on the remote control.

A gift may be processed when the user selects send option 362. Gift information may be sent to a

15 television distribution facility or a television program entity for processing. The user's account at the television distribution facility may be debited for the cost of the gift or another suitable accounting mechanism may be used. The recipient of a gift may be

20 notified of the gift by a message received on the recipient's set-top box or e-mail to an Internet user. Gift merchandise may be shipped to the recipient. If the gift is a pay-per-view program, the recipient's pay-per-view account may be credited by the amount of

25 the gift or gift certificate. If the recipient is not a user of user television equipment (e.g., the recipient is an Internet user), the recipient may be notified of the gift and given an access code that allows the recipient to view free pay-per-view programs

30 on his television up to the amount of the gift. If the recipient is a subscriber to the services of the same television distribution facility 16 as the gift giver, the access code may be provided by that television

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distribution facility and may be released by the same television distribution facility.

If desired, television distribution facilities may be networked together so that a gift
5 giver and recipient may be subscribers in different television distribution facilities. The TV message system may also authorize a specified gift PPV program automatically for the recipient without requiring an access code. In another embodiment, the local program
10 guide that receives the PPV gift may allow the recipient of the gift to access the PPV program without charging the recipient and without requiring an access code.

Referring now to FIG. 22, television message
15 system display screen 370 is an example of a user interface that allows a user to purchase program-related merchandise. The set-top box application may display screen 370 when the user selects a gift option such as gift option 354 of screen 350 (FIG. 21).
20 Screen 370 provides the user with an opportunity to select program-related merchandise that he wishes to purchase as a gift for another user. The merchandise options 372, 374, 376, and 378 represent items of merchandise related to the program "Titanic" which the
25 user can purchase. If the user wishes to pay by credit card, the user may enter his credit card number and its expiration date in boxes 380 and 382 respectively. If the user wishes to have his account at the television distribution facility debited, he may select payment
30 option 384. An advertisement may be displayed in region 381 of screen 370.

Referring now to FIG. 23, television message system display screen 460 is an example of a user interface that allows a user to enter gift recipient

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identity and address information. The set-top box application may display screen 460 when the user selects an option such as the "enter recipient" option 360 of screen 350 (FIG. 21). Screen 460 provides the user with an opportunity to enter information about the gift recipient so that the recipient may be notified that the gift has been purchased, and so that the recipient may receive the gift. The user may enter the gift recipient's name in region 462. The user may enter the gift recipient's electronic address (e.g. e-mail address) in region 464 if the recipient has an electronic address. The user may enter the recipient's street address (e.g. home address or mailing address) in region 466 if the gift is a tangible item such as program merchandise that is to be physically sent to the recipient. The user may enter the gift recipient's television address in region 468. The television address may be the address corresponding the gift recipient's user television equipment device which has messaging features. A notification that a gift has been purchased may be sent to the electronic address, the street address, or the television address. If desired, the television address may correspond to the gift recipient's television distribution facility so that the gift recipient may be credited for a pay-per-view program gift or gift certificate that has been purchased by the user.

An illustrative process for allowing a user of user television equipment to purchase a gift through the television message system is shown in FIG. 24. At step 390, the set-top box application provides the user with an opportunity to send a gift to a recipient. The set-top box application can provide this opportunity through a user interface such as display screen 350 of

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FIG. 21. The gift can be related to television programming such as program-related merchandise or a pay-per-view program.

After the user selects the gift and the
5 recipient of the gift, the television message system transmits the gift information to the television distribution facility (or a remote server or a television program entity for e.g. the purchase of program merchandise) at step 392 where the user's
10 account is debited. The user's account can be a pay-per-view account or other account maintained with the television distribution facility, an account maintained with a television channel, an account maintained at a third party institution (such as a bank), a credit card
15 account such as a Visa account, or any other suitable account. At step 394, the recipient may be notified that a gift has been purchased for him. The recipient may be notified by the shipper of the merchandise, or by the television distribution facility that handles
20 pay-per-view programming for that recipient. The recipient may be notified by an electronic message that is sent to the message server where messages for the recipient are maintained.

Many of the features of the present invention
25 may be used with a two-way interactive display remote control. An example of a display remote control is shown in FIG. 25. Display remote control 480 contains display screen 482 which may be any suitable type of display screen. A user may compose a message to
30 another user using buttons 484. Pressing any of buttons 484 causes the selected letter or number to appear adjacent to cursor 491. The user may delete a letter or number by pressing Backspace button 486, and may enter upper case letters by pressing Shift button

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488. The user may enter the recipient's address in region 495 of display screen 482, and may send the message by selecting Send option 494. The user may navigate between selected regions of display screen 482 using arrow buttons 498. For example, Send option 494 is highlighted in FIG. 25. Therefore, if the user press Enter button 490, the message will be sent to the recipient. Pressing the down arrow causes address region 495 to become active so that pressing buttons 484 causes letters or numerals to be entered in region 495.

The user may also view messages that have been sent to him by others users by selecting option 492. Option 492 opens up the user's inbox so that the user can read incoming messages directly on display screen 482. These features give the user additional privacy when composing messages and reading incoming messages. The display remote control therefore is a two-way interactive remote in that messages may be composed and sent, as well as received and read by the user. Further features of an illustrative display remote control are described in Herrington et al. U.S. provisional patent application Serial No. 60/138,868, filed June 11, 1999, which is hereby incorporated by reference herein in its entirety. A display remote may also be used for chatting between users. Further features of an illustrative television chat system are described in DeWeese et al. U.S. patent application Serial No. 09/356,270, filed concurrently herewith (Attorney Docket No. UV-101), which is hereby incorporated by reference herein in its entirety.

The foregoing is merely illustrative of the principles of this invention and various modifications

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can be made by those skilled in the art without
departing from the scope and spirit of the invention.

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The Invention Claimed Is:

1. A television message system in which users at user television equipment devices that are connected to a television distribution facility by communications paths may send messages to each other over the communications paths, the television distribution facility providing television programming over the communications paths that is displayed on the user television equipment devices, the message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility by one of the communications paths and each of which is configured to allow the user at that user television equipment device to send and receive messages over that communications path and which is configured to receive television programming from the television distribution facility over that communications path for display on that user television equipment device; and

means for distributing a message sent by a first of the users to a second of the users, wherein each user television equipment device is configured to provide the first user at that user television equipment device with an opportunity to send the message, wherein the message is transmitted to the means for distributing the message from the first user along an associated one of the communications paths, wherein the message is accessed by the second user from the means for distributing the message over another one of the communications paths.

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2. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the first user at that user television equipment device with the opportunity to send the message to the second user using an interactive television display screen on that user television equipment device.

3. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a reminder message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

4. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a recommendation message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

5. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message related to a television program that is part of the television programming to another user of another user television equipment device.

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6. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send an audio message to another user of another user television equipment device.

7. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a video message to another user of another user television equipment device.

8. The television message system defined in claim 1 wherein each user television equipment device is further configured to provide the user at that user television equipment device with an opportunity to send a message to a user of a user communications equipment device.

9. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a user recipient by selecting the user recipient from an address book, the address book containing an address of the user recipient.

10. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a group of other users by selecting the

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group of other users from an address book, the address book containing addresses of the other users in the group.

11. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

12. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

13. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

14. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send

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a message to other users of other user television equipment devices who are interested in a particular category of television programs.

15. The television message system defined in claim 1 wherein each user television equipment device connected to the television distribution facility is configured to provide a user at that user television equipment device with an opportunity to send a message to a user of a user television equipment device connected to a different television distribution facility.

16. The television message system defined in claim 1 wherein each user television equipment device includes a set-top box on which a set-top box application is implemented that is used in sending and receiving the messages for that user television equipment device.

17. The television message system defined in claim 1 further comprising:

means for implementing a stand-alone television messaging application on each user television equipment device that is used to send and receive the messages for the user television equipment device on which that stand-alone television messaging application is implemented.

18. The television message system defined in claim 1 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that

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is used to send and receive the messages for the user television equipment device on which that interactive television program guide is implemented.

19. The television message system defined in claim 1 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that is used to send and receive the messages for the user television equipment device on which that interactive television program guide is implemented; and

a memory device on each the user television equipment device configured to store a program listings database.

20. The television message system defined in claim 1 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that is used to send and receive the messages for the user television equipment device on which that interactive television program guide is implemented; and

a memory device storing a program listings database that is in communication with the interactive program guide.

21. The television message system defined in claim 1 wherein the television distribution facility comprises a cable system headend.

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22. The television message system defined in claim 21 wherein the communications paths are coaxial cables.

23. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to block future messages from a sender of a message received by the user.

24. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to block future reminder messages from a sender of a reminder message received by the user.

25. The television message system defined in claim 1 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to create a message, add the message to a list of messages, and send the message to another user at any time.

26. The television message system defined in claim 1 wherein the television message system is configured to automatically save messages sent by the users so that each user can access messages that he has previously sent and resend any of the messages.

27. A television message system in which users at user television equipment devices that are

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connected to a television distribution facility by communications paths may send messages to each other over the communications paths, the television distribution facility providing television programming over the communications paths that is displayed on the user television equipment devices, the message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility by one of the communications paths and each of which is configured to allow the user at that user television equipment device to send and receive messages over that communications path and which is configured to receive television programming from the television distribution facility over that communications path for display on that user television equipment device; and

message equipment configured to distribute a message sent by a first of the users to a second of the users, wherein each user television equipment device is configured to provide the first user at that user television equipment device with an opportunity to send the message, wherein the message is transmitted to the message equipment from the first user along an associated one of the communications paths, wherein the message is accessed by the second user from the message equipment over another one of the communications paths.

28. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the first user at that user television equipment device with the opportunity to send the message to the second user using an

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interactive television display screen on that user television equipment device.

29. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a reminder message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

30. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a recommendation message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

31. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message related to a television program that is part of the television programming to another user of another user television equipment device.

32. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send

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an audio message to another user of another user television equipment device.

33. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a video message to another user of another user television equipment device.

34. The television message system defined in claim 27 wherein the message equipment is a message server located at the television distribution facility.

35. The television message system defined in claim 27 wherein each user television equipment device is further configured to provide the user at that user television equipment device with an opportunity to send a message to a user of a user communications equipment device.

36. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a user recipient by selecting the user recipient from an address book, the address book containing an address of the user recipient.

37. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a group of other users by selecting the

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group of other users from an address book, the address book containing addresses of the other users in the group.

38. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

39. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

40. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

41. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send

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a message to other users of other user television equipment devices who are interested in a particular category of television programs.

42. The television message system defined in claim 27 wherein each user television equipment device connected to the television distribution facility is configured to provide a user at that user television equipment device with an opportunity to send a message to a user of a user television equipment device connected to a different television distribution facility.

43. The television message system defined in claim 27 wherein each user television equipment device includes a set-top box on which a set-top box application is implemented that is used in sending and receiving the messages for that user television equipment device.

44. The television message system defined in claim 27 further comprising a stand-alone television messaging application implemented on each user television equipment device that is used in sending and receiving the messages for the user television equipment device on which that stand-alone television messaging application is implemented.

45. The television message system defined in claim 27 further comprising an interactive television program guide with television messaging features implemented on each user television equipment device that is used in sending and receiving the messages for

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the user television equipment device on which that interactive television program guide is implemented.

46. The television message system defined in claim 27 further comprising an interactive television program guide with television messaging features implemented on each user television equipment device that is used in sending and receiving the messages for the user television equipment device on which that interactive television program guide is implemented, the user television equipment device further comprising memory configured to store a program listings database.

47. The television message system defined in claim 27 further comprising an interactive television program guide with television messaging features implemented on each user television equipment device that is used in sending and receiving the messages for the user television equipment device on which that interactive television program guide is implemented, and a memory device configured to store a program listings database that is in communication with the interactive program guide.

48. The television message system defined in claim 27 wherein the television distribution facility comprises a cable system headend.

49. The television message system defined in claim 48 wherein the communications paths are coaxial cables.

50. The television message system defined in claim 27 wherein each user television equipment device

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is configured to provide the user at that user television equipment device with an opportunity to block future messages from a sender of a message received by the user.

51. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to block future reminder messages from a sender of a reminder message received by the user.

52. The television message system defined in claim 27 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to create a message, add the message to a list of messages, and send the message to another user at any time.

53. The television message system defined in claim 27 wherein the television message system is configured to automatically save messages sent by the users so that each user can access messages that he has previously sent and resend any of the messages.

54. A method for distributing messages in a television message system in which users at a plurality of user television equipment devices that are connected to a television distribution facility by communications paths may send messages to each other over the communications paths, the television distribution facility providing television programming over the

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communications paths that is displayed on the user television equipment devices, comprising:

receiving television programming on each of the user television equipment devices from the television distribution facility over the communications paths for display on the user television equipment devices;

providing a first user at each user television equipment device with an opportunity to send a message from that user television equipment device to a second user at another one of the user television equipment devices; and

transmitting the message to message equipment from the first user along an associated one of the communications paths, wherein the message can be accessed by the user television equipment device of the second user from the message equipment.

55. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user is performed through an interactive television display screen on that user television equipment device.

56. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send a reminder message to the second user to watch a television program that is received as part of the television programming.

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57. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send a recommendation message to the second user to watch a television program that is received as part of the television programming.

58. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send a message related to a television program that is part of the television programming to the second user.

59. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send an audio message to the second user.

60. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send a video message to the second user.

61. The method defined in claim 54 wherein the television distribution facility comprises a cable

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system headend, and wherein the communications paths are coaxial cables.

62. The method defined in claim 54 further comprising providing the user at each user television equipment device with an opportunity to send a message to a user of a user communications equipment device.

63. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send the message to the second user by selecting the second user from an address book, the address book containing an address of the second user.

64. The method defined in claim 54 wherein providing the first user at each user television equipment device with the opportunity to send the message to the second user further comprises providing the first user with an opportunity to send the message to a group of other users by selecting the group of other users from an address book, the address book containing addresses of the other users in the group.

65. The method defined in claim 54 further comprising providing the user at each user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

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66. The method defined in claim 54 further comprising providing the user at each user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

67. The method defined in claim 54 further comprising providing the user at each user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

68. The method defined in claim 54 further comprising providing the user at each user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular category of television programs.

69. The method defined in claim 54 further comprising providing a user at each user television equipment device connected to the television distribution facility with an opportunity to send a message to a user of a user television equipment device connected to a different television distribution facility.

70. The method defined in claim 54 wherein each user television equipment device includes a set-top box, and wherein the method further comprises implementing a set-top box application on the set-top

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box that is used in sending and receiving the messages for that user television equipment device.

71. The method defined in claim 54 further comprising implementing a stand-alone television messaging application on each user television equipment device for sending and receiving the messages for the user television equipment device on which that stand-alone television messaging application is implemented.

72. The method defined in claim 54 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending and receiving the messages for the user television equipment device on which that interactive television program guide is implemented.

73. The method defined in claim 54 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending and receiving the messages for the user television equipment device on which that interactive television program guide is implemented, and wherein the user television equipment device further comprises memory configured to store a program listings database.

74. The method defined in claim 54 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending and receiving the messages for the user television equipment device on which that interactive television

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program guide is implemented, and storing a program listings database on a memory device that is in communication with the interactive program guide.

75. The method defined in claim 54 wherein the television distribution facility comprises a cable system headend.

76. The method defined in claim 75 wherein the communications paths are coaxial cables.

77. The method defined in claim 54 further comprising providing the user at the user television equipment device with an opportunity to block future messages from a sender of a message received by the user.

78. The method defined in claim 54 further comprising providing the user at the user television equipment device with an opportunity to block future reminder messages from a sender of a reminder message received by the user.

79. A television message system in which users at user television equipment devices that are connected to a television distribution facility by communications paths may send messages to television program entities, the television distribution facility providing television programming to the user television equipment devices, the message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility and each of which is configured to receive the television programming from

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the television distribution facility over a respective one of the communications paths and to display the television programming on that user television equipment device; and

means for distributing messages from the users to at least one television program entity, wherein the user television equipment devices are configured to provide the users with opportunities to send the messages to at least one television program entity that are related to the television programming received on the user television equipment devices, wherein the messages are transmitted over the communications paths to the means for distributing messages from the user television equipment devices.

80. The television message system defined in claim 79 wherein each user television equipment device is configured to provide the user at that user television equipment device with the opportunity to send the message to the television program entity using an interactive television display screen on that user television equipment device.

81. The television message system defined in claim 79 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to participate in a contest that is related to the television programming by sending a contest message to the television program entity.

82. The television message system defined in claim 79 wherein each user television equipment device is configured to provide the user at that user

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television equipment device with an opportunity to participate in a survey that includes survey questions related to the television programming by sending a survey message comprising answers to the survey questions to the television program entity.

83. The television message system defined in claim 79 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to participate in a promotion that is related to the television programming by sending a promotion message to the television program entity.

84. The television message system defined in claim 79 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send an evaluation message of a television program to the television program entity, the television program being part of the television programming received on that user television equipment device.

85. The television message system defined in claim 79 wherein each user television equipment device includes a set-top box on which a set-top box application is implemented that is used in sending the messages to the television program entities from that user television equipment device.

86. The television message system defined in claim 79 further comprising:

means for implementing a stand-alone television messaging application on each user

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television equipment device that is used to send the messages from the user television equipment device on which that stand-alone television messaging application is implemented to the television program entities.

87. The television message system defined in claim 79 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that is used to send the messages from the user television equipment device on which that interactive television program guide is implemented to the television program entities.

88. The television message system defined in claim 79 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that is used to send the messages from the user television equipment device on which that interactive television program guide is implemented to the television program entities; and

a memory device on each the user television equipment device configured to store a program listings database.

89. The television message system defined in claim 79 further comprising:

means for implementing an interactive television program guide with television messaging features on each user television equipment device that is used to send the messages from the user television

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equipment device on which that interactive television program guide is implemented to the television program entities; and

a memory device configured to store a program listings database that is in communication with the interactive program guide.

90. The television message system defined in claim 79 wherein the television distribution facility comprises a cable system headend.

91. The television message system defined in claim 90 wherein the communications paths are coaxial cables.

92. A television message system in which users at user television equipment devices that are connected to a television distribution facility by communications paths may send messages to television program entities, the television distribution facility providing television programming to the user television equipment devices, the television message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility and each of which is configured to receive the television programming from the television distribution facility over a respective one of the communications paths and to display the television programming on that user television equipment device; and

message equipment that is configured to distribute messages from the users to at least one television program entity, wherein the user television

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equipment devices are configured to provide the users with opportunities to send the messages to at least one television program entity that are related to the television programming being received by the user television equipment devices, wherein the messages are transmitted over the communications paths to the message equipment from the user television equipment devices.

93. The television message system defined in claim 92 wherein each user television equipment device is configured to provide the user at that user television equipment device with the opportunity to send the message to the television program entity using an interactive television display screen on that user television equipment device.

94. The television message system defined in claim 92 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to participate in a contest that is related the television programming by sending a contest message to the television program entity.

95. The television message system defined in claim 92 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to participate in a survey that includes survey questions related to the television programming by sending a survey message comprising answers to the survey questions to the television program entity.

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96. The television message system defined in claim 92 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to participate in a promotion that is related to the television programming by sending a promotion message to the television program entity.

97. The television message system defined in claim 92 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send an evaluation message of a television program to the television program entity, the television program being received as part of the television programming.

98. The television message system defined in claim 92 wherein each user television equipment device includes a set-top box on which a set-top box application is implemented that is used in sending the messages to the television program entity from that user television equipment device.

99. The television message system defined in claim 92 further comprising a stand-alone television messaging application implemented on each user television equipment device that is used in sending the messages to the television program entity from the user television equipment device on which that stand-alone television messaging application is implemented.

100. The television message system defined in claim 92 further comprising an interactive television program guide with television messaging features

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implemented on each user television equipment device that is used in sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented.

101. The television message system defined in claim 92 further comprising an interactive television program guide with television messaging features implemented on each user television equipment device that is used in sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented, the user television equipment device further comprising memory configured to store a program listings database.

102. The television message system defined in claim 92 further comprising an interactive television program guide with television messaging features implemented on each user television equipment device that is used in sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented, and a memory configured to store a program listings database that is in communication with the interactive program guide.

103. The television message system defined in claim 92 wherein the television distribution facility comprises a cable system headend.

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104. The television message system defined in claim 103 wherein the communications paths are coaxial cables.

105. A method for sending messages in a television message system in which users at user television equipment devices that are connected to a television distribution facility by communications paths may send messages to television program entities, the television distribution facility providing television programming to the user television equipment devices, the message system comprising:

receiving the television programming from the television distribution facility at each of the user television equipment devices over a respective one of the communications paths that is displayed on the user television equipment devices, each of the user television equipment devices being connected to the television distribution facility by the communications paths;

providing the user at each user television equipment device with an opportunity to send a message to at least one television program entity that is related to the television programming that is received on that user television equipment device; and

distributing the message to at least one television program entity by transmitting the message along an associated one of the communications paths from the user television equipment device.

106. The method defined in claim 105 wherein providing the user at each user television equipment device with the opportunity to send the message to the television program entity is performed using an

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interactive television display screen on that user television equipment device.

107. The method defined in claim 105 wherein providing the user at each user television equipment device with the opportunity to send the message further comprises providing the user at each user television equipment device with an opportunity to participate in a contest that is related to the television programming received on that user television equipment device by sending a contest message to the television program entity.

108. The method defined in claim 105 wherein providing the user at each user television equipment device with the opportunity to send the message further comprises providing the user at each user television equipment device with an opportunity to participate in a survey that includes survey questions related to the television programming by sending a survey message comprising answers to the survey questions to the television program entity.

109. The method defined in claim 105 wherein providing the user at each user television equipment device with the opportunity to send the message further comprises providing the user at each user television equipment device with an opportunity to participate in a promotion that is related the television programming received on that user television equipment device by sending a promotion message to the television program entity.

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110. The method defined in claim 105 wherein providing the user at each user television equipment device with the opportunity to send the message further comprises providing the user at each user television equipment device with an opportunity to send an evaluation message of a television program to the television program entity, the television program being received as part of the television programming.

111. The method defined in claim 105 wherein each user television equipment device includes a set-top box, and wherein the method further comprises implementing a set-top box application on the set-top box that is used in sending the messages to the television program entity from that user television equipment device.

112. The method defined in claim 105 further comprising implementing a stand-alone television messaging application on each user television equipment device for sending the messages to the television program entity from the user television equipment device on which that stand-alone television messaging application is implemented.

113. The method defined in claim 105 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented.

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114. The method defined in claim 105 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented, and wherein the user television equipment device further comprises memory configured to store a program listings database.

115. The method defined in claim 105 further comprising implementing an interactive television program guide with television messaging features on each user television equipment device for sending the messages to the television program entity from the user television equipment device on which that interactive television program guide is implemented, and storing a program listings database on a memory device that is in communication with the interactive program guide.

116. The method defined in claim 105 wherein the television distribution facility comprises a cable system headend.

117. The method defined in claim 116 wherein the communications paths are coaxial cables.

118. A television message system for purchasing gifts in which users at a plurality of user television equipment devices that are connected to a television distribution facility by respective communications paths may purchase gifts for recipients, the television distribution facility providing

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television programming to the user television equipment devices, the television message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility and each of which is configured to receive the television programming from the television distribution facility over a respective one of the communications paths and to display the television programming on that user television equipment device, each of the user television equipment devices being configured to receive gift information over the respective communications path regarding the potential purchase of a gift for a recipient at a location remote from that user television equipment device; and

means for providing the user at each user television equipment device with an opportunity to view the gift information and an opportunity to purchase the gift for the recipient at the location remote from that user television equipment device by supplying purchase information that includes the identity of the recipient of the gift.

119. The television message system defined in claim 118 further comprising means for delivering the purchase information to the television distribution facility for debiting a user account.

120. The television message system defined in claim 118 wherein the means for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to identify which gifts are to be purchased as part of the purchase information.

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121. The television message system defined in claim 118 wherein the means for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to enter the street address of the recipient so that the gift may be sent to the street address.

122. The television message system defined in claim 118 wherein the means for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to enter an address corresponding to the user television equipment device of the recipient so that a notification message may be sent to the recipient's user television equipment device notifying the recipient that the gift has been purchased.

123. The television message system defined in claim 118 wherein the means for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to enter an e-mail address of the recipient so that a notification message may be sent to the e-mail address notifying the recipient that the gift has been purchased.

124. The television message system defined in claim 118 wherein each of the user television equipment devices is configured to receive the gift information over the respective communications path regarding the potential purchase of television program merchandise as a gift for a recipient at a location remote from that user television equipment device; and wherein the means

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for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to purchase the television program merchandise as the gift for the recipient.

125. The television message system defined in claim 118 wherein each of the user television equipment devices is configured to receive the gift information over the respective communications path regarding the potential purchase of a pay-per-view television program as a gift for a recipient at a location remote from that user television equipment device; and wherein the means for providing the user with the opportunity to purchase the gift further comprises means for providing the user with an opportunity to purchase the pay-per-view television program as the gift for the recipient.

126. A television message system for purchasing gifts in which users at a plurality of user television equipment devices that are connected to a television distribution facility by respective communications paths may purchase gifts for recipients, the television distribution facility providing television programming to the user television equipment devices, the television message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility, wherein each of the user television equipment devices is configured to:

receive the television programming from the television distribution facility over a respective one of the communications paths;

display the television programming on that user television equipment device;

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receive gift information over the respective communications path regarding the potential purchase of a gift for a recipient at a location remote from that user television equipment device;

provide the user at that user television equipment device with an opportunity to view the gift information; and

provide the user at that user television equipment device with an opportunity to purchase the gift for the recipient at the location remote from that user television equipment device by supplying purchase information that includes the identity of the recipient of the gift.

127. The television message system defined in claim 126 wherein each user television equipment device is further configured to deliver the purchase information to the television distribution facility for debiting a user account.

128. The television message defined in claim 126 wherein each user television equipment device is configured to provide the user with an opportunity to identify which gifts are to be purchased as part of the purchase information.

129. The television message system defined in claim 126 wherein each user television equipment device is further configured to provide the user with an opportunity to enter the street address of the recipient so that the gift may be sent to the street address.

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130. The television message system defined in claim 126 wherein each user television equipment device is further configured to provide the user with an opportunity to enter an address corresponding to the user television equipment device of the recipient so that a notification message may be sent to the recipient's user television equipment device notifying the recipient that the gift has been purchased.

131. The television message system defined in claim 126 wherein each user television equipment device is further configured to provide the user with an opportunity to enter an e-mail address of the recipient so that a notification message may be sent to the e-mail address notifying the recipient that the gift has been purchased.

132. The television message system defined in claim 126 wherein each of the user television equipment devices is further configured to receive the gift information over the respective communications path regarding the potential purchase of television program merchandise as a gift for a recipient at a location remote from that user television equipment device, and to provide the user with an opportunity to purchase the television program merchandise as the gift for the recipient.

133. The television message system defined in claim 126 wherein each of the user television equipment devices is further configured to receive the gift information over the respective communications path regarding the potential purchase of a pay-per-view television program as a gift for a recipient at a

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location remote from that user television equipment device, and to provide the user with an opportunity to purchase the pay-per-view television program as the gift for the recipient.

134. A method for purchasing gifts in a television message system in which users at a plurality of user television equipment devices that are connected to a television distribution facility by respective communications paths may purchase gifts for recipients, the television distribution facility providing television programming to the user television equipment devices, comprising:

receiving the television programming from the television distribution facility at each of the user television equipment devices over a respective one of the communications paths that is displayed on the user television equipment devices;

receiving gift information over one of the communications paths with a given one of the user television equipment devices, the gift information regarding the potential purchase of a gift for a recipient at a location remote from the given user television equipment device; and

providing the user at the given user television equipment device with an opportunity to view the gift information and an opportunity to purchase the gift for the recipient at the location remote from the given user television equipment device by supplying purchase information that includes the identity of the recipient of the gift.

135. The method defined in claim 134 further comprising delivering the purchase information to the

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television distribution facility for debiting a user account.

136. The method defined in claim 134 wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to identify which gifts are to be purchased as part of the purchase information.

137. The method defined in claim 134 wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to enter the street address of the recipient so that the gift may be sent to the street address.

138. The method defined in claim 134 wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to enter an address corresponding to the user television equipment device of the recipient so that a notification message may be sent to the recipient's user television equipment device notifying the recipient that the gift has been purchased.

139. The method defined in claim 134 wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to enter an e-mail address of the recipient so that a notification message may be sent to the e-mail address notifying the recipient that the gift has been purchased.

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140. The method defined in claim 134 wherein receiving the gift information further comprises receiving the gift information regarding the potential purchase of television program merchandise as a gift for a recipient at a location remote from the given user television equipment device; and wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to purchase the television program merchandise for the recipient.

141. The method defined in claim 134 wherein receiving the gift information further comprises receiving the gift information regarding the potential purchase of a pay-per-view television program as a gift for a recipient at a location remote from the given user television equipment device; and wherein providing the user with the opportunity to purchase the gift further comprises providing the user with an opportunity to purchase the pay-per-view television program for the recipient.

142. A television message system in which users at user television equipment devices that are connected to a television distribution facility by communications paths may send messages to each other, the television distribution facility providing television programming over the communications paths that is displayed on the user television equipment devices, the message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility by one of the communications paths and each of which is configured to

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receive television programming from the television distribution facility over that communications path for display on that user television equipment device, wherein an interactive television program guide implemented on each user television equipment device allows the user at that user television equipment device to send and receive messages; and

message equipment configured to distribute a message sent by a first of the users to a second of the users, wherein the interactive program guide on each user television equipment device is configured to provide the first user at that user television equipment device with an opportunity to send the message, wherein the message is transmitted to the message equipment from the first user and is accessed by the second user from the message equipment.

143. The television message system defined in claim 142 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a reminder message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

144. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a recommendation message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

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145. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message related to a television program that is part of the television programming to another user of another user television equipment device.

146. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send an audio message to another user of another user television equipment device.

147. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a video message to another user of another user television equipment device.

148. The television message system defined in claim 142 wherein the message equipment is a message server located at the television distribution facility.

149. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment

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device with an opportunity to send a message to a user of a user communications equipment device.

150. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a user recipient by selecting the user recipient from an address book, the address book containing an address of the user recipient.

151. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a group of other users by selecting the group of other users from an address book, the address book containing addresses of the other users in the group.

152. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

153. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to

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provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

154. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

155. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular category of television programs.

156. The television message system defined in claim 142 wherein the interactive program guide on each user television equipment device connected to the television distribution facility is configured to provide a user at that user television equipment device with an opportunity to send a message to a user of a user television equipment device connected to a different television distribution facility.

157. A television message system in which users at user television equipment devices that are connected to a television distribution facility by

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communications paths may send messages to each other, the television distribution facility providing television programming over the communications paths that is displayed on the user television equipment devices, the message system comprising:

a plurality of the user television equipment devices, each of which is connected to the television distribution facility by one of the communications paths and each of which is configured to receive television programming from the television distribution facility over that communications path for display on that user television equipment device, wherein an interactive television program guide implemented on each user television equipment device allows the user at that user television equipment device to send and receive messages; and

means for distributing a message sent by a first of the users to a second of the users, wherein the interactive program guide on each user television equipment device is configured to provide the first user at that user television equipment device with an opportunity to send the message, wherein the message is transmitted to the means for distributing the message from the first user and is accessed by the second user from the means for distributing the message.

158. The television message system defined in claim 157 wherein each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a reminder message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

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159. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a recommendation message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

160. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message related to a television program that is part of the television programming to another user of another user television equipment device.

161. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send an audio message to another user of another user television equipment device.

162. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a video message to another user of another user television equipment device.

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163. The television message system defined in claim 157 wherein the message equipment is a message server located at the television distribution facility.

164. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a user of a user communications equipment device.

165. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a user recipient by selecting the user recipient from an address book, the address book containing an address of the user recipient.

166. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to a group of other users by selecting the group of other users from an address book, the address book containing addresses of the other users in the group.

167. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment

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device with an opportunity to send a message to other users of other user television equipment devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

168. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

169. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

170. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device is configured to provide the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular category of television programs.

171. The television message system defined in claim 157 wherein the interactive program guide on each user television equipment device connected to the

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television distribution facility is configured to provide a user at that user television equipment device with an opportunity to send a message to a user of a user television equipment device connected to a different television distribution facility.

172. A method for distributing messages in a television message system in which a plurality of user television equipment devices are connected to a television distribution facility by communications paths, the television distribution facility providing television programming over the communications paths that is displayed on the user television equipment devices, comprising:

receiving television programming on each of the user television equipment devices from the television distribution facility over the communications paths for display on the user television equipment devices;

implementing an interactive program guide that provides a first user at each user television equipment device with an opportunity to send a message from that user television equipment device to a second user at another one of the user television equipment devices; and

transmitting the message to message equipment from the first user along an associated one of the communications paths, wherein the message can be accessed by the user television equipment device of the second user from the message equipment.

173. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television

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equipment device with an opportunity to send a reminder message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

174. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a recommendation message to another user of another user television equipment device to watch a television program that is received as part of the television programming.

175. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message related to a television program that is part of the television programming to another user of another user television equipment device.

176. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send an audio message to another user of another user television equipment device.

177. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a video

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message to another user of another user television equipment device.

178. The method defined in claim 172 wherein the message equipment is a message server located at the television distribution facility.

179. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to a user of a user communications equipment device.

180. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to a user recipient by selecting the user recipient from an address book, the address book containing an address of the user recipient.

181. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to a group of other users by selecting the group of other users from an address book, the address book containing addresses of the other users in the group.

182. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment

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devices who are watching a current television program that the user is watching, the current television program being part of the television programming.

183. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television program.

184. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular television channel.

185. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing the user at that user television equipment device with an opportunity to send a message to other users of other user television equipment devices who are interested in a particular category of television programs.

186. The method defined in claim 172 wherein implementing the interactive program guide further comprises providing a user at that user television equipment device with an opportunity to send a message to a user of a user television equipment device

- 111 -

connected to a different television distribution
facility.

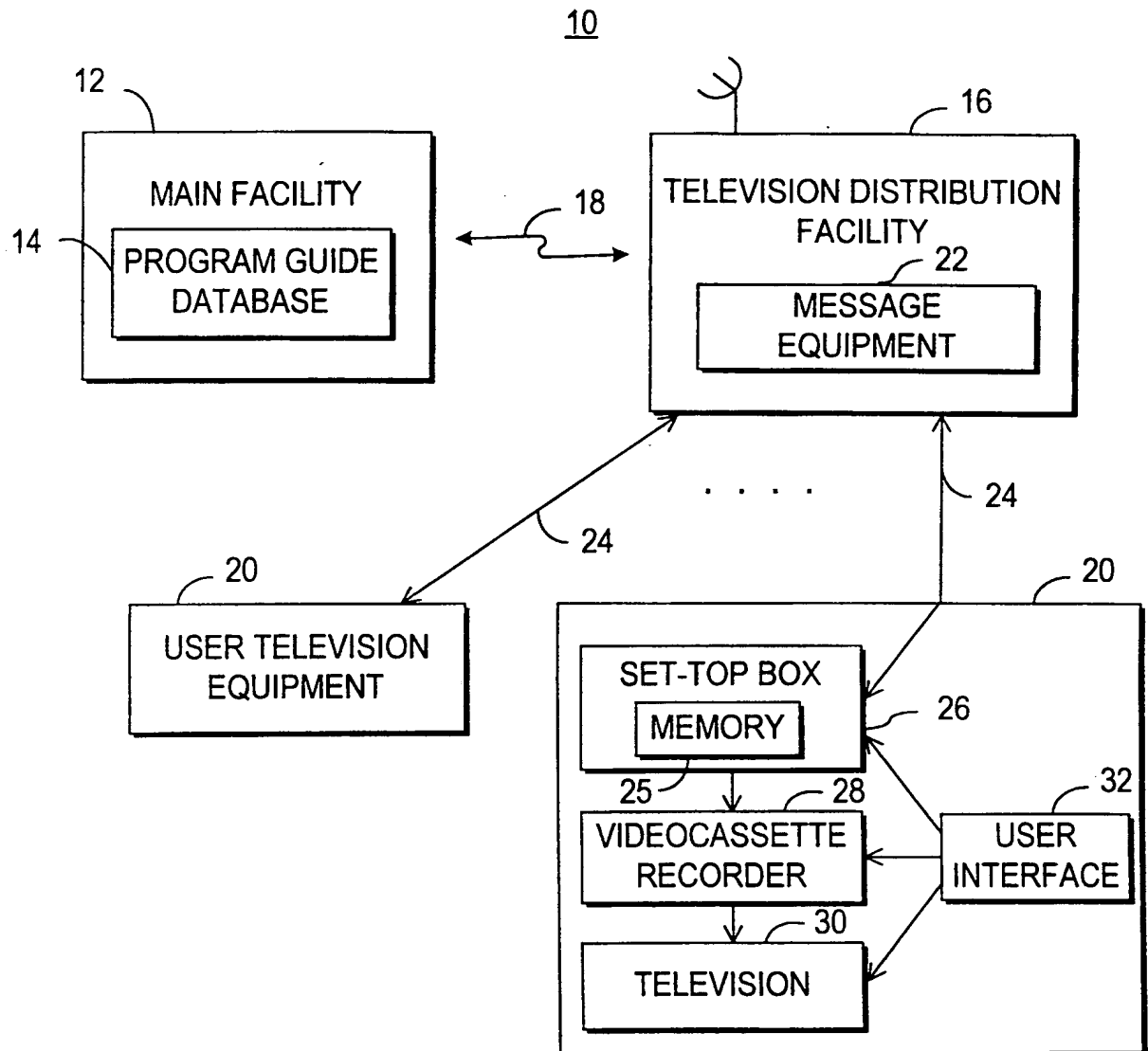
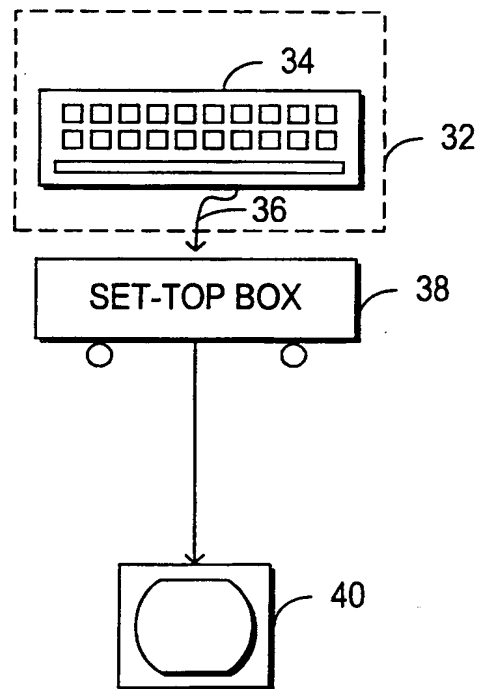
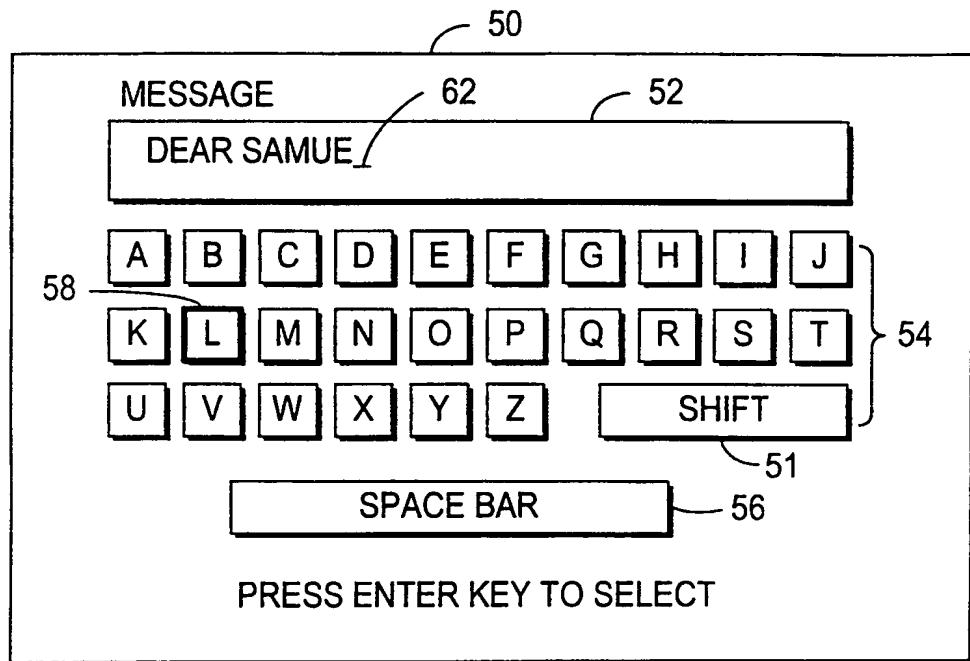


FIG. 1A

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*FIG. 1B*

*FIG. 1C*

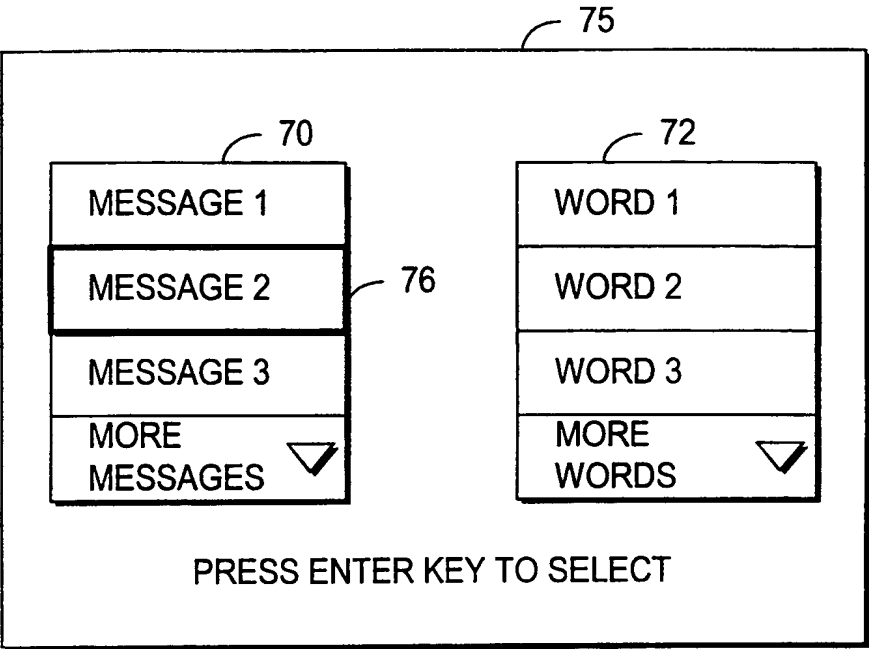


FIG. 1D

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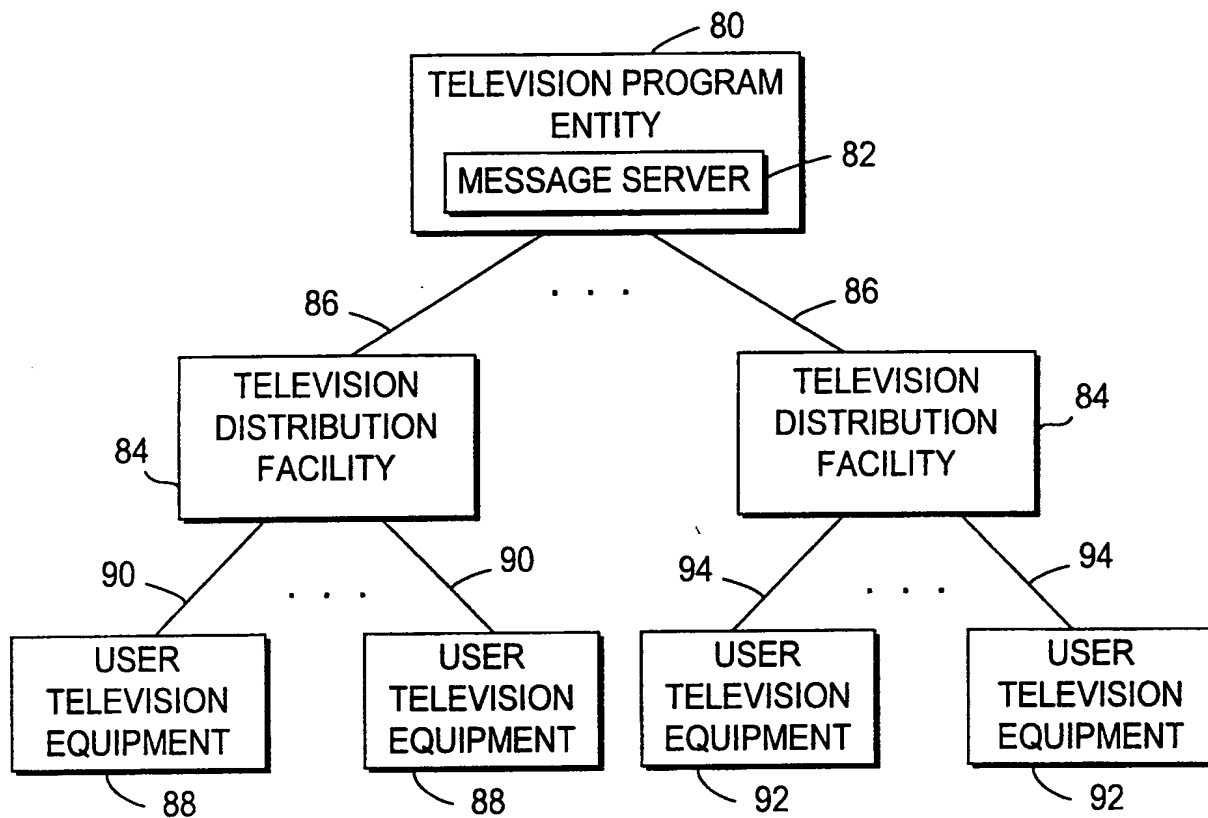


FIG. 2A

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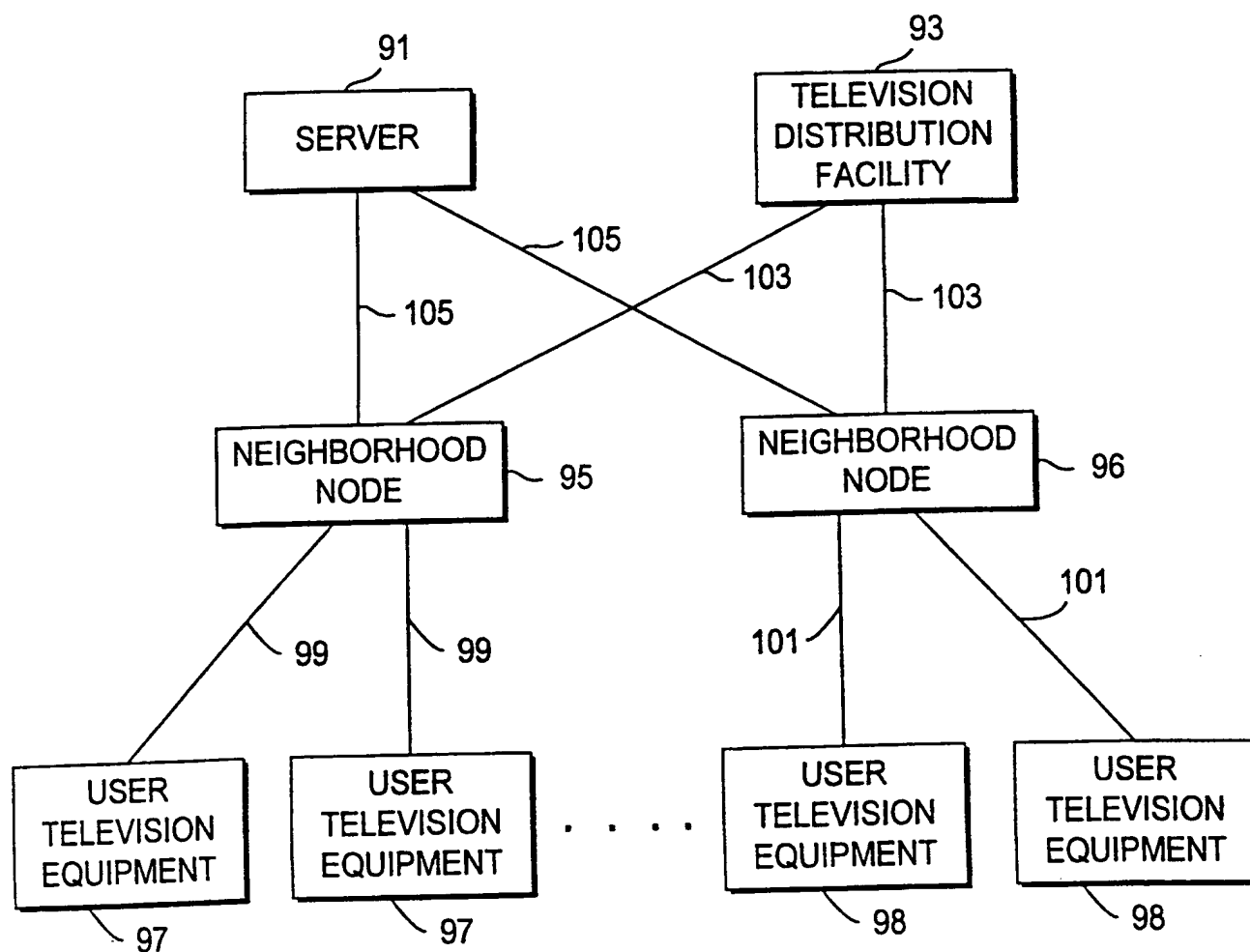


FIG. 2B

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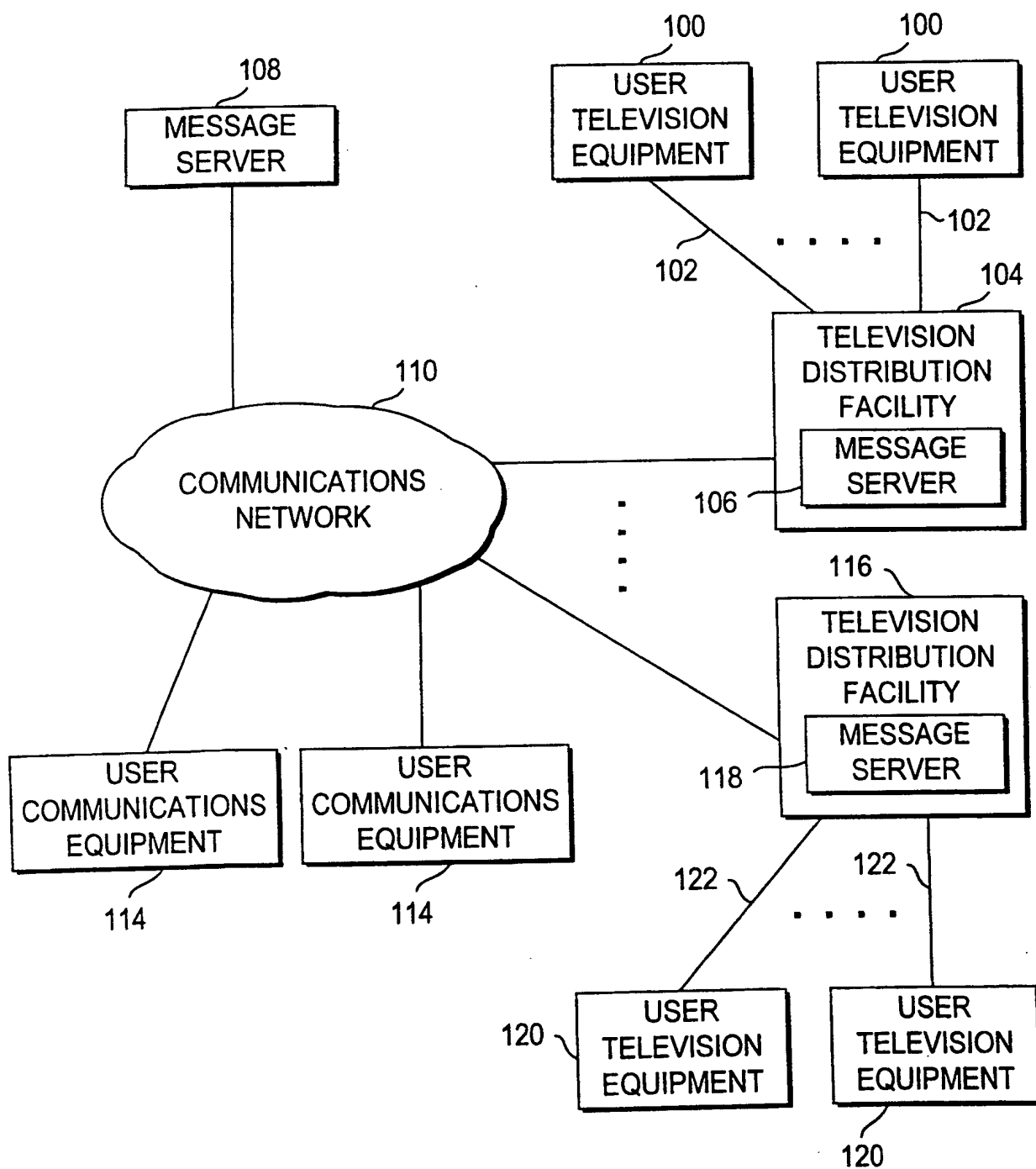


FIG. 3

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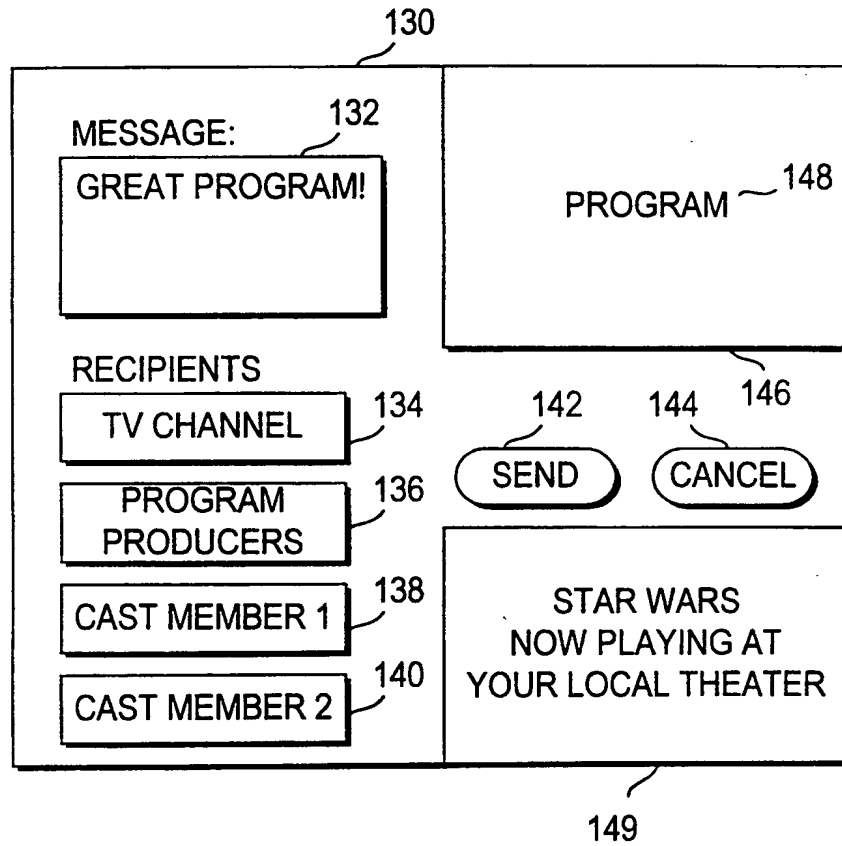
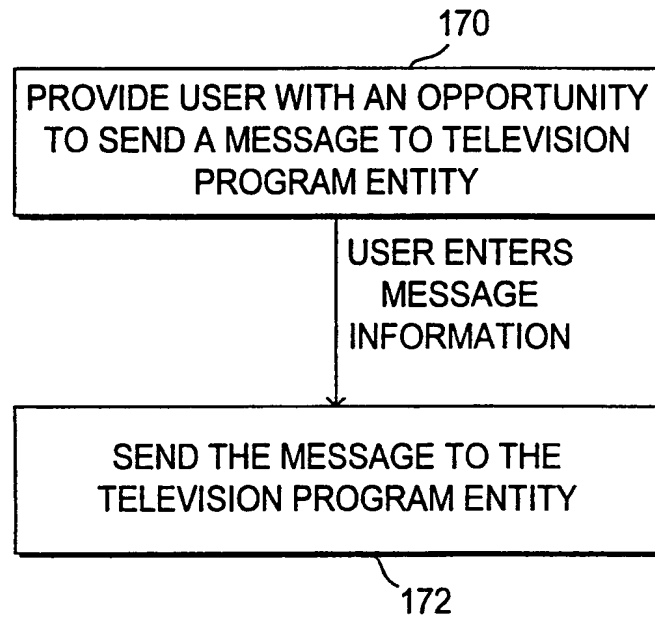


FIG. 4

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*FIG. 5*

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420

ENTER USER PROFILE INFORMATION:

NAME

FAVORITE PROGRAMS

FAVORITE CATEGORIES OF PROGRAMS

FAVORITE CHANNELS

ADMIT MESSAGES ONLY FROM

BLOCK MESSAGES FROM

RESIDENCE: CITY STATE

OK CANCEL

422 425 426 432 438 430 428 435 437 436 439 441 443

FIG. 6A

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421

ENTER USER IDENTITY

423 NAME

427 ADDRESS

OK

CANCEL

433 ADD TO GROUP

429

431

The diagram shows a rectangular window titled "ENTER USER IDENTITY" with a reference numeral 421. Inside the window, there are two input fields: "NAME" with reference numeral 423 and "ADDRESS" with reference numeral 427. At the bottom of the window, there are three buttons: an "OK" button with reference numeral 429, a "CANCEL" button with reference numeral 431, and an "ADD TO GROUP" button with reference numeral 433. The "ADD TO GROUP" button is a rectangle, while the "OK" and "CANCEL" buttons are rounded rectangles.

FIG. 6B

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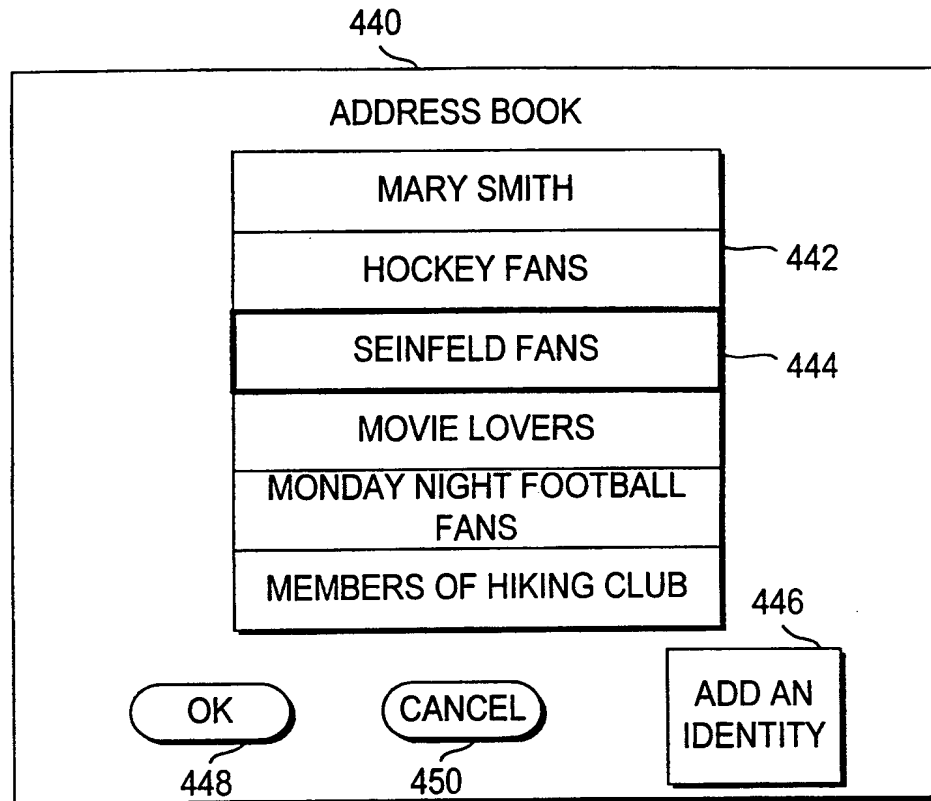


FIG. 6C

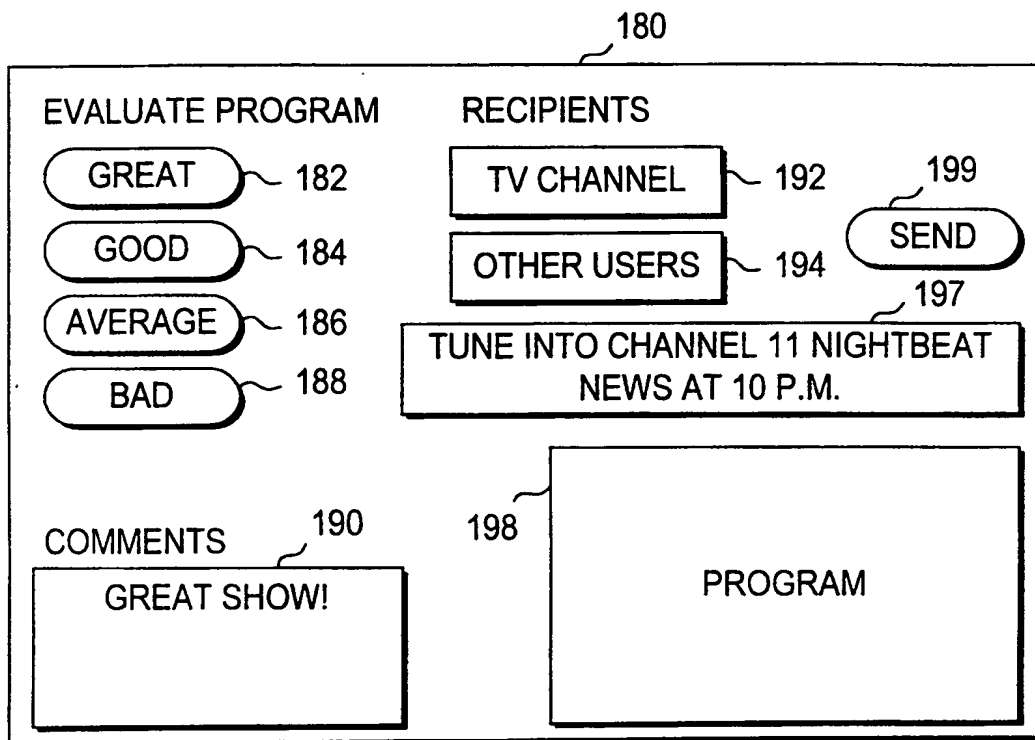
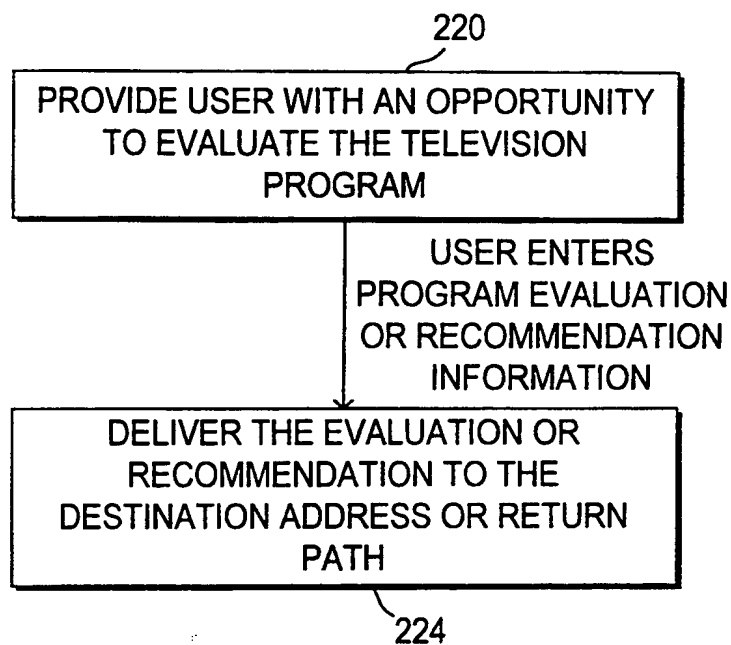


FIG. 7

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*FIG. 8*

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230

PROGRAM SURVEY:

1. HOW OFTEN DO YOU WATCH THIS PROGRAM?

EVERY DAY 232a ONCE A WEEK 232b ONCE A MONTH 232c

2. WHAT CATEGORIES OF TV PROGRAMS INTEREST YOU?

MOVIES 234a SPORTS 234b COMEDY 234c NEWS 234d

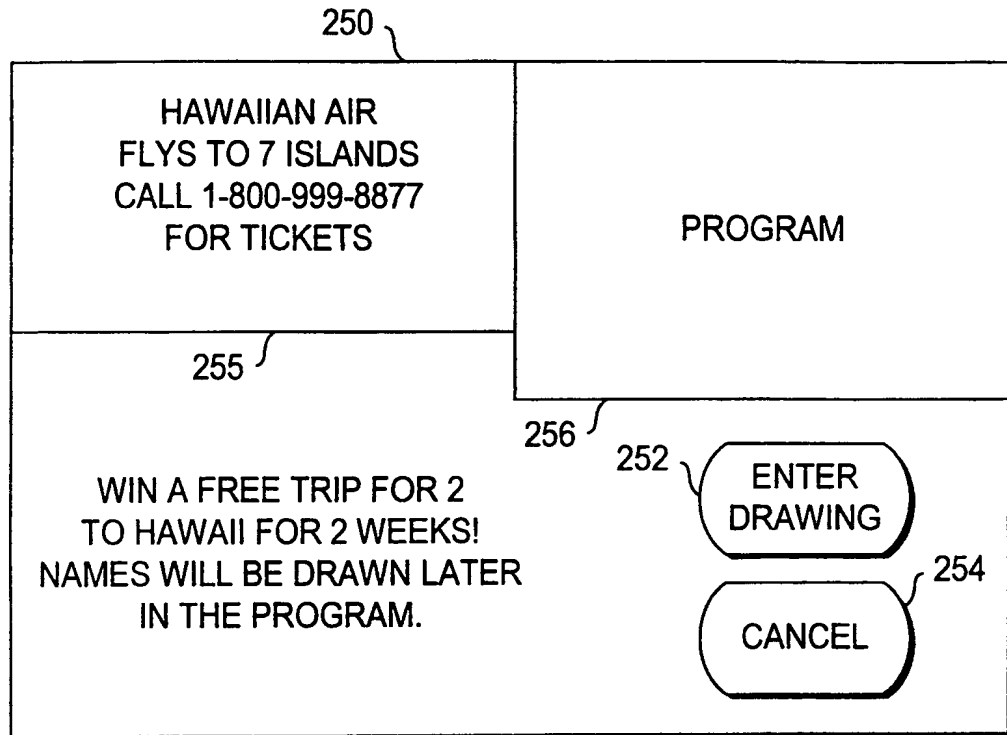
NEXT SET OF QUESTIONS 236 SEND ANSWERS 238 CANCEL 240

235

VISA[®]: IT'S EVERYWHERE YOU WANT TO BE

FIG. 9

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**FIG. 10**

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410

JEOPARDY FOR
HOME VIEWERS

411

QUESTION: WHAT IS THE CAPITAL OF PERU?

McDonalds
99 ¢
HAMBURGERS

ANSWER 412

LIMA

415

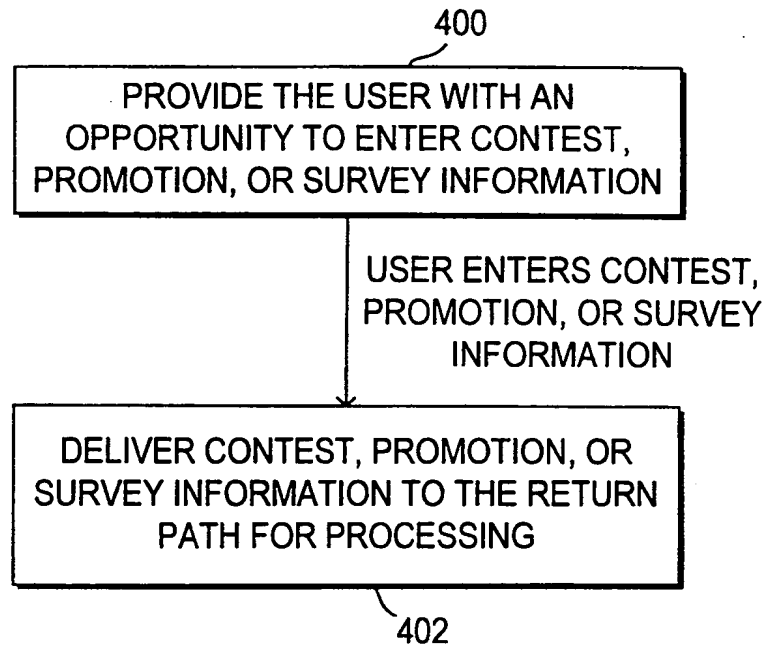
414

SEND

416

FIG. 11

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*FIG. 12*

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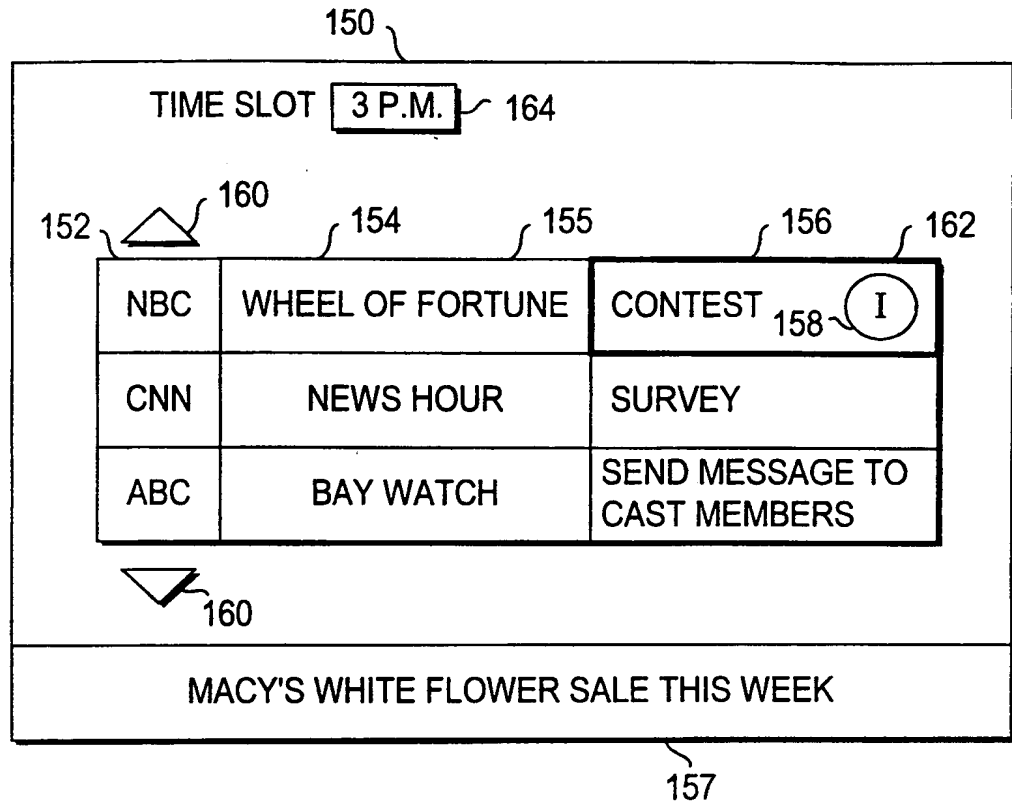


FIG. 13

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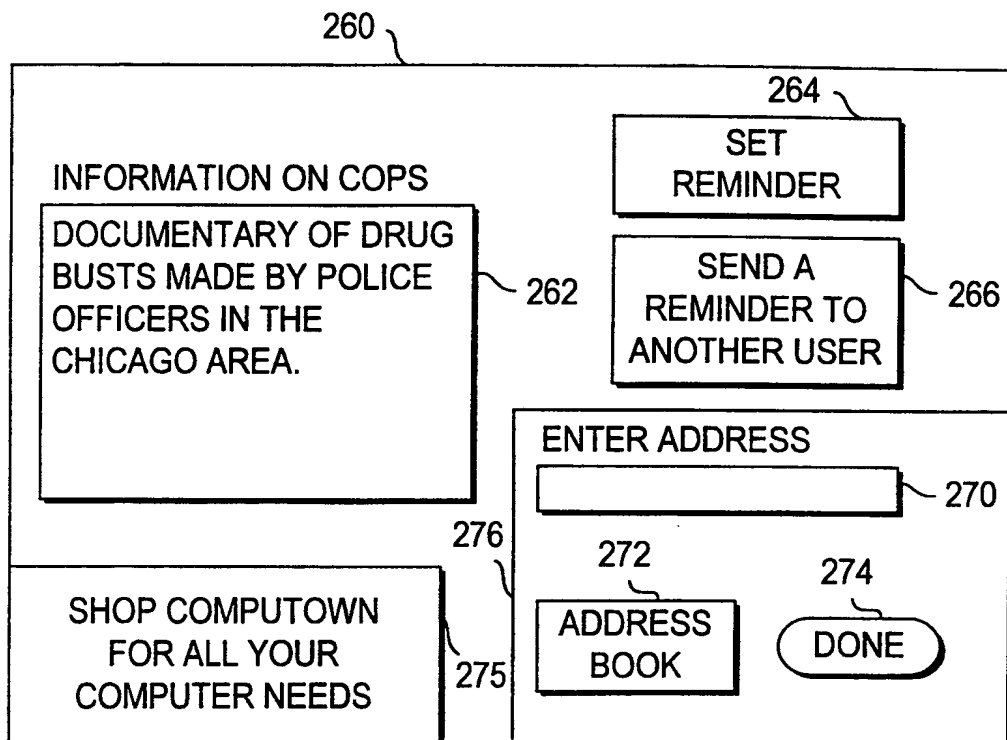


FIG. 14

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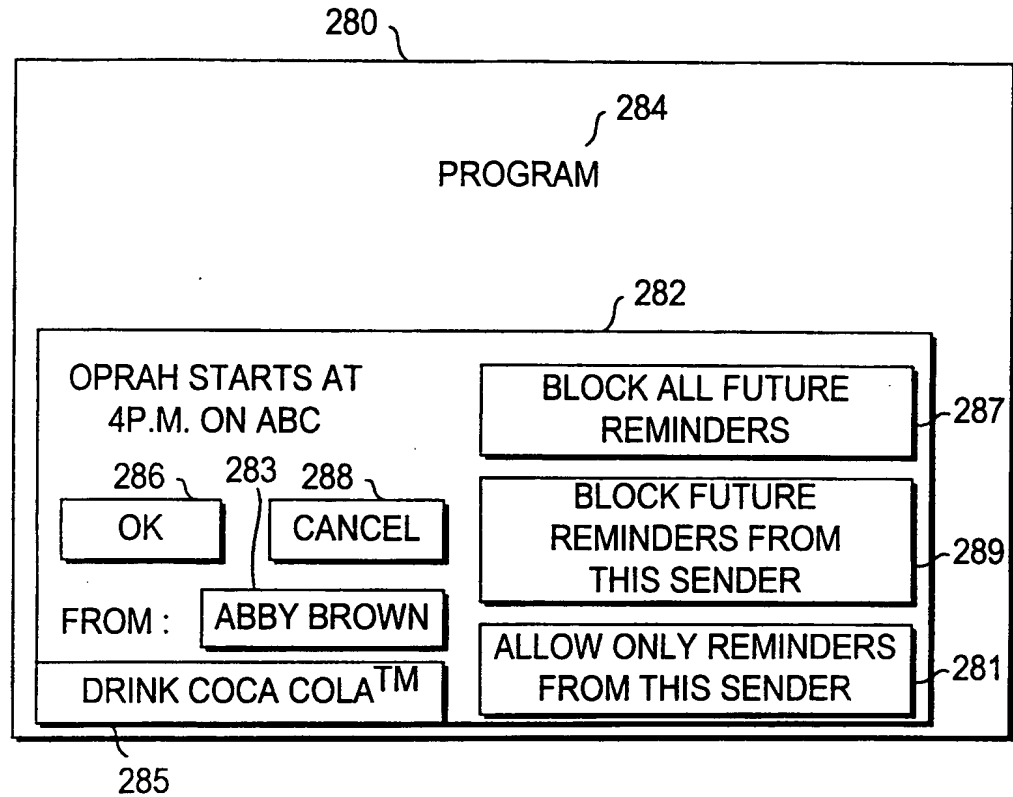
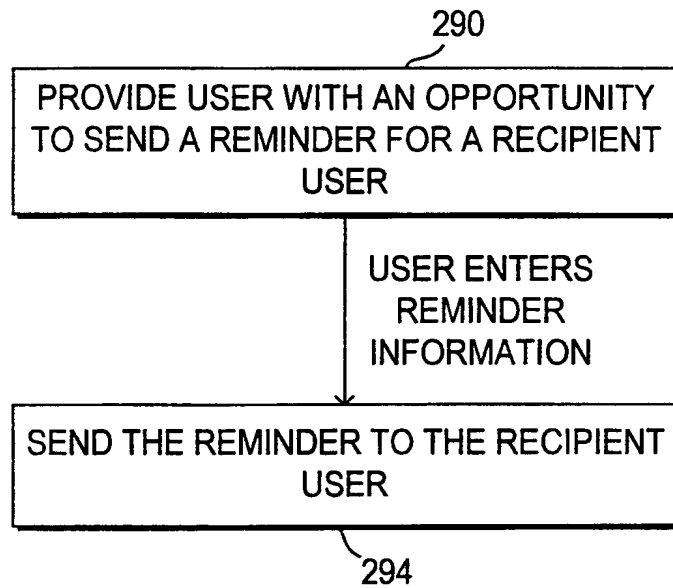


FIG. 15

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**FIG. 16**

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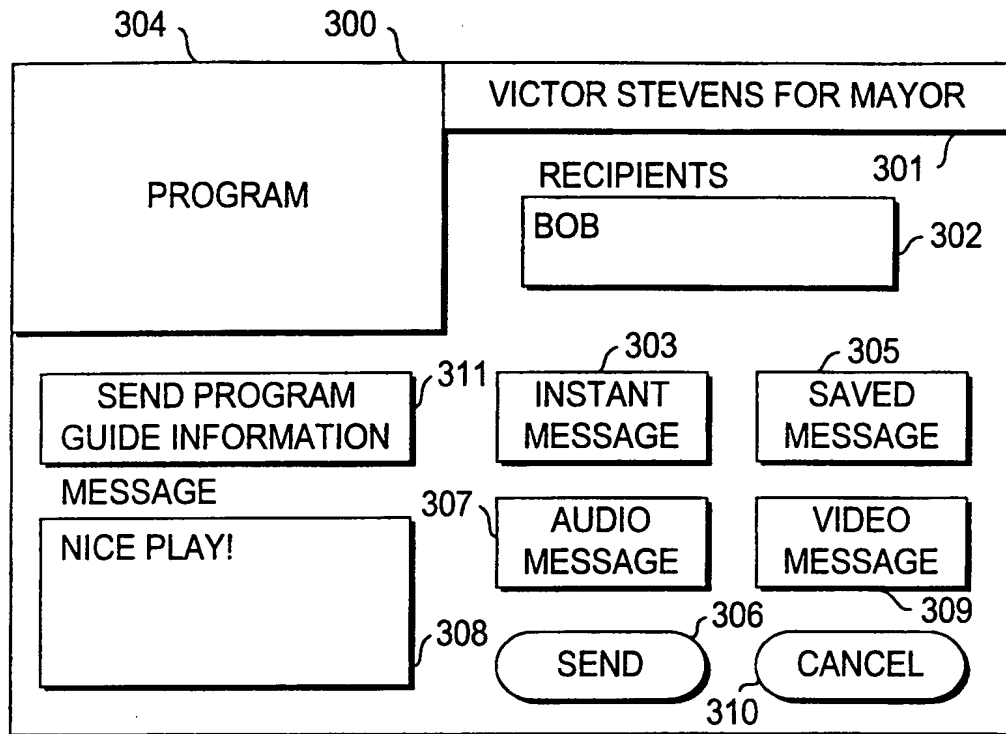


FIG. 17

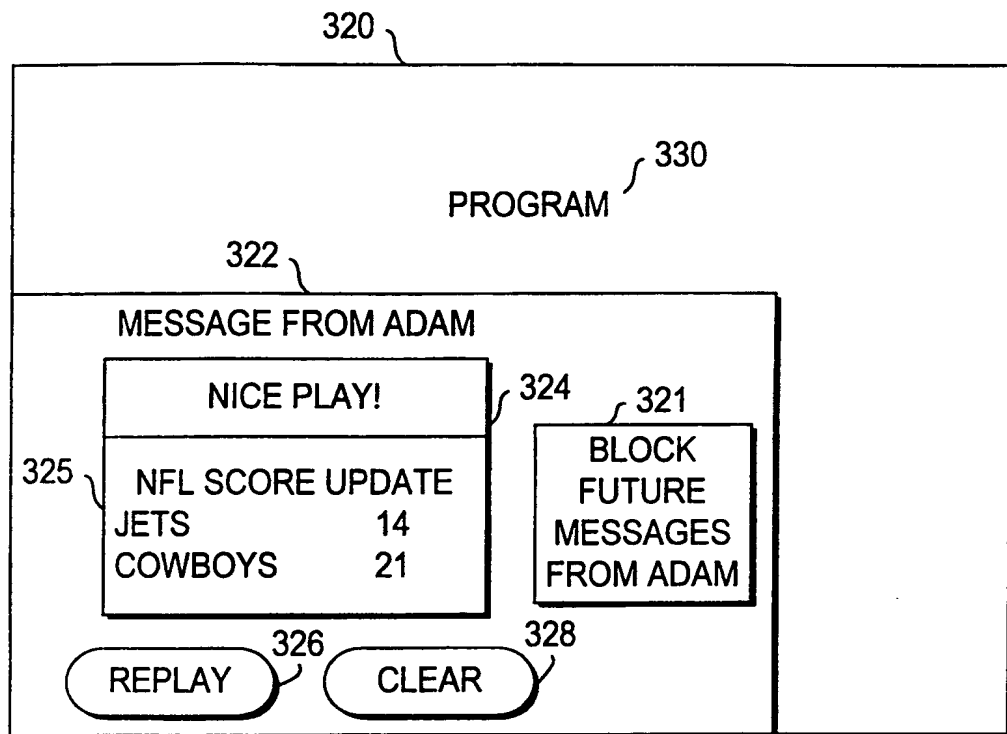
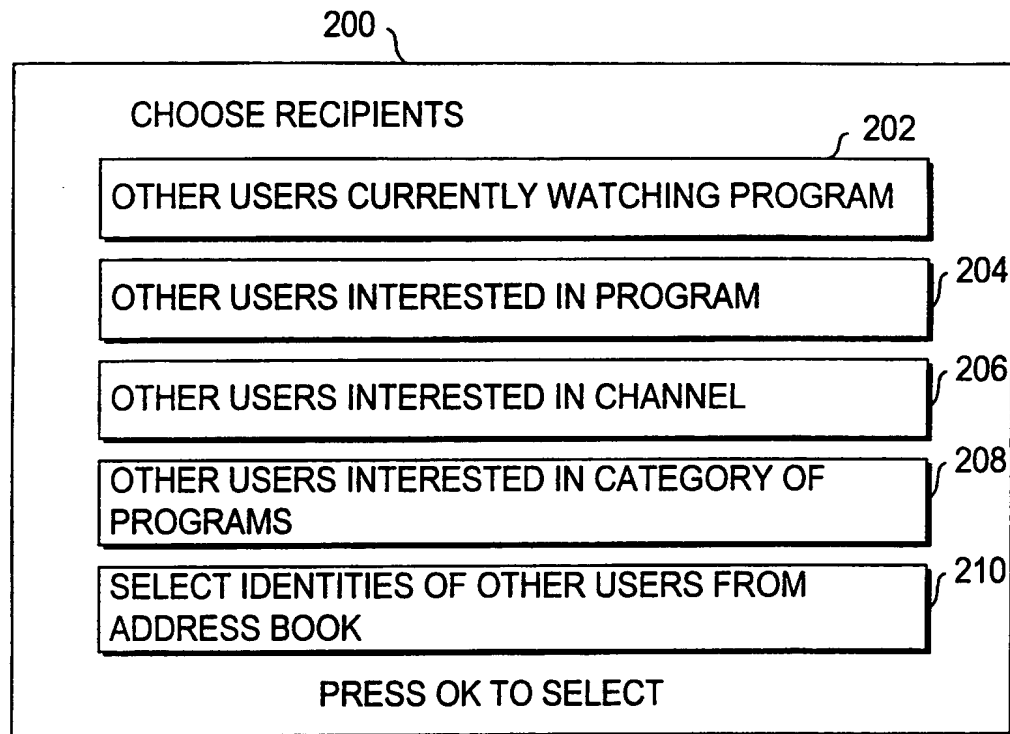
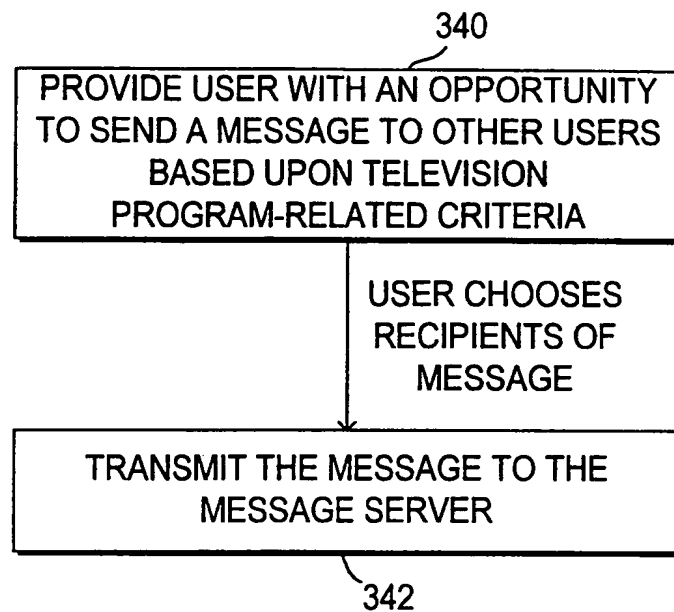


FIG. 18

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*FIG. 19*

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*FIG. 20*

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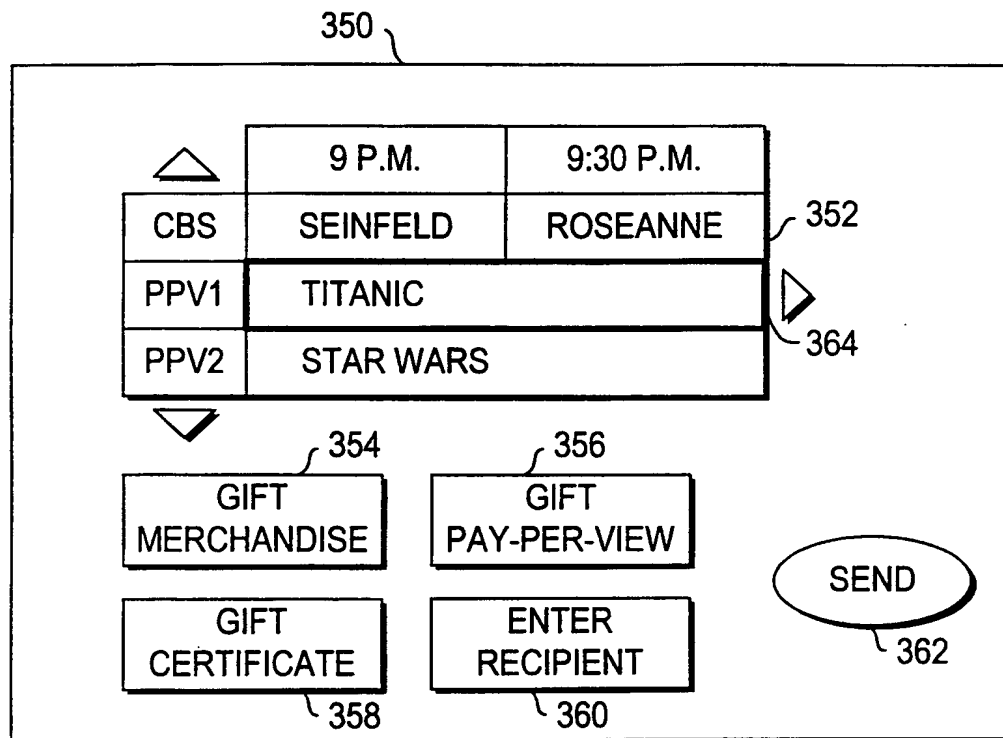


FIG. 21

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370

TITANIC MERCHANDISE:

TITANIC T-SHIRT 372	LEONARDO DICAPRIO POSTER 374
TITANIC COFFEE MUG 376	TITANIC VIDEO CASSETTE 378

PAYMENT METHOD:

CREDIT CARD NO. 380 EX. DATE 382

DEBIT ACCOUNT 384	FORD TAURUS NO.1 IN ITS CLASS 381
-------------------	-----------------------------------

FIG. 22

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460

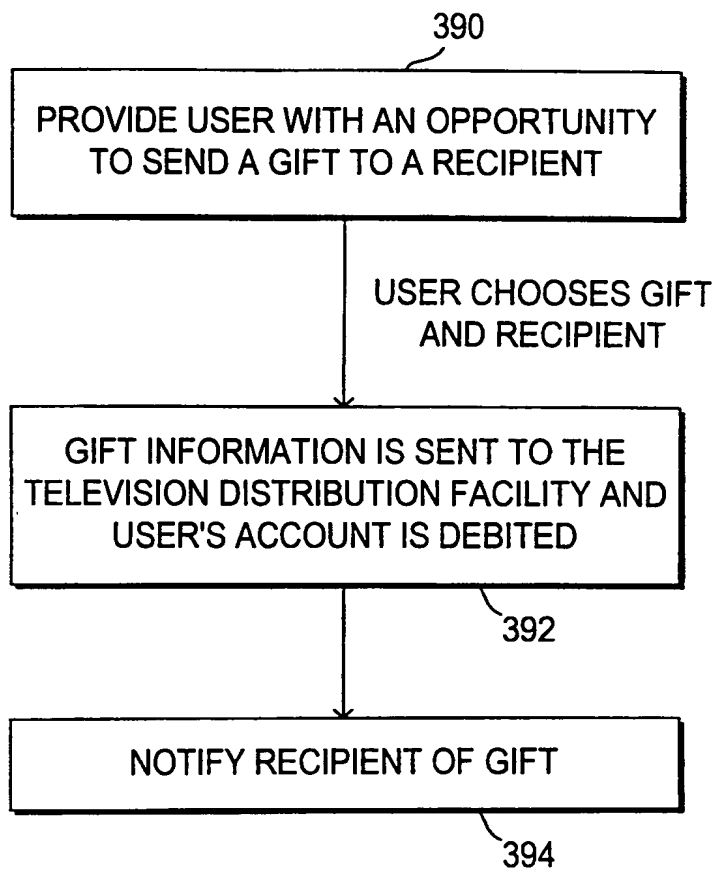
ENTER GIFT RECIPIENT INFORMATION

NAME 462	ELECTRONIC ADDRESS 464
<input type="text"/>	<input type="text"/>
STREET ADDRESS	TELEVISION ADDRESS
<input type="text"/>	<input type="text"/>
466	468

PRESS ENTER WHEN FINISHED

FIG. 23

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**FIG. 24**

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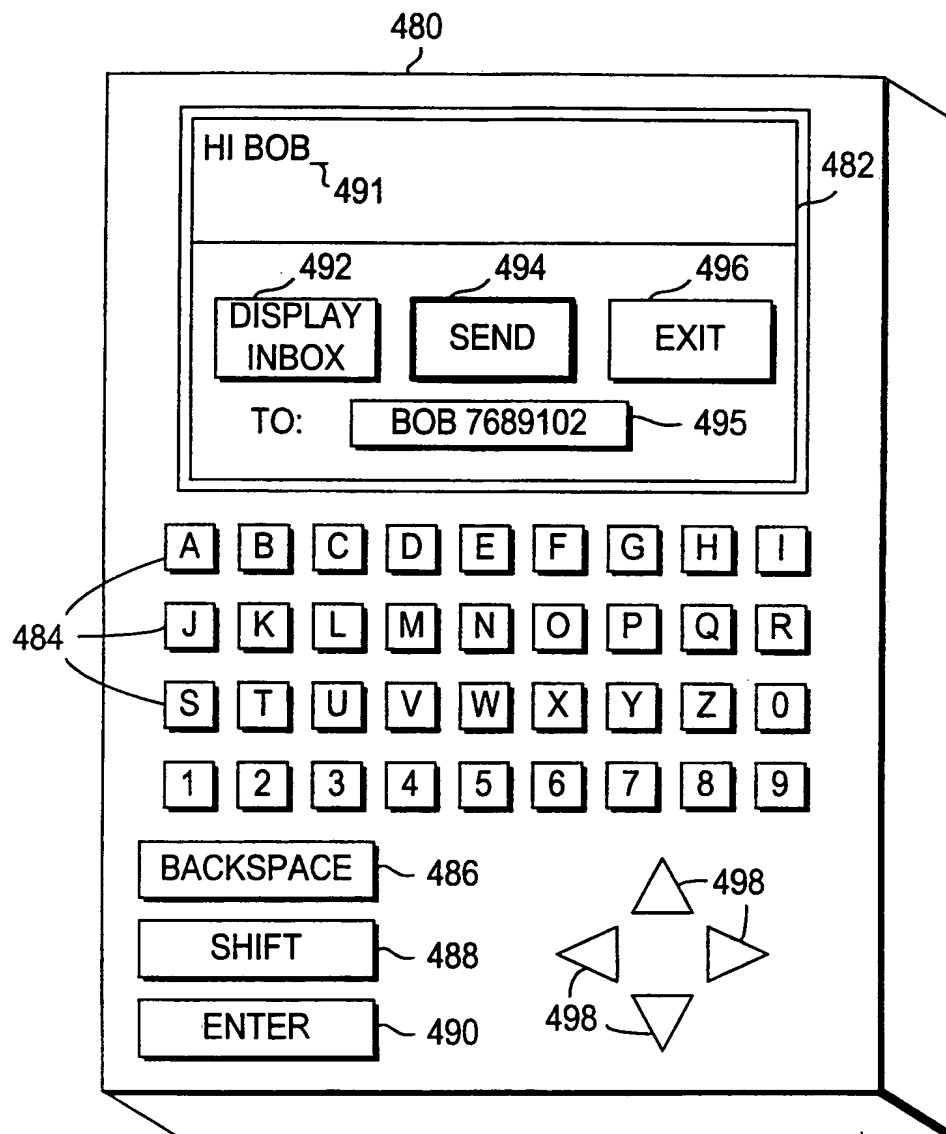


FIG. 25



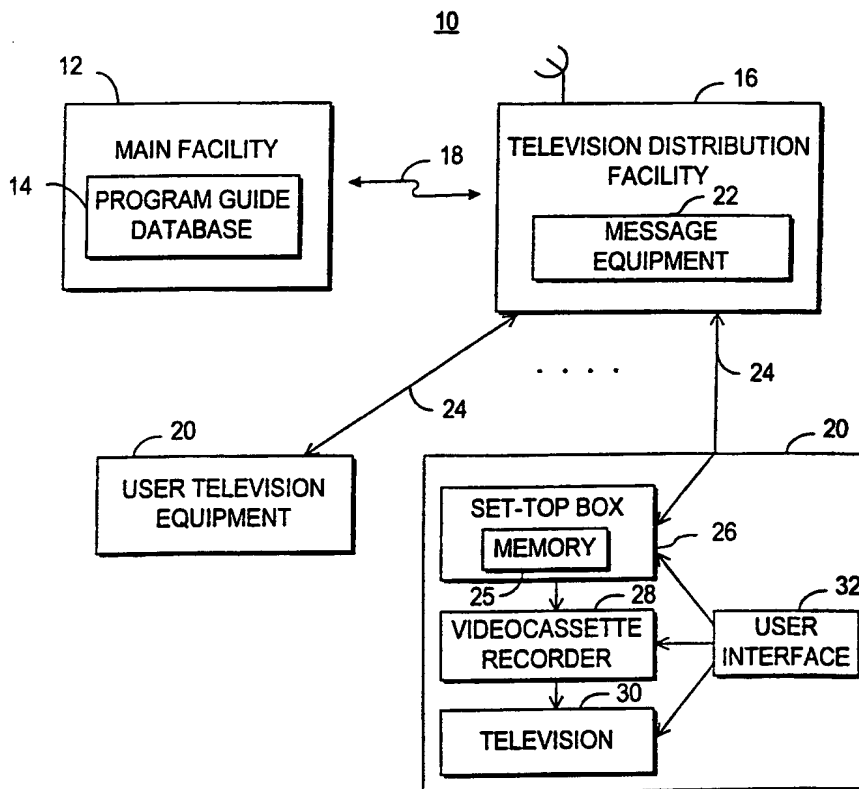
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04N 7/173, 7/14		A3	(11) International Publication Number: WO 00/13415
			(43) International Publication Date: 9 March 2000 (09.03.00)
(21) International Application Number: PCT/US99/19541		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 26 August 1999 (26.08.99)			
(30) Priority Data: 60/099,301 26 August 1998 (26.08.98) US 09/356,245 16 July 1999 (16.07.99) US			
(71) Applicant: UNITED VIDEO PROPERTIES, INC. [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US).			
(72) Inventors: MCKISSICK, Pamela, L.; 6919 South Columbia Avenue, Tulsa, OK 74136 (US). THOMAS, William, L.; 11611 South 70th East Avenue, Bixby, OK 74008 (US). ELLIS, Michael, D.; 1300 Kingwood Place, Boulder, CO 80304 (US). REGOUBY, Mark, A.; 9627 South 91st East Avenue, Tulsa, OK 74133 (US). HASSELL, Joel, G.; 8246 Yarrow Court, Arvada, CO 80005 (US).		Published With international search report.	
(74) Agents: TREYZ, G., Victor et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).		(88) Date of publication of the international search report: 2 June 2000 (02.06.00)	

(54) Title: TELEVISION MESSAGE SYSTEM

(57) Abstract

A television message system is provided that allows users at user television equipment devices that are connected to a television distribution facility to transmit messages to each other relating to a television program or other suitable subject. The television message system permits users to participate in evaluations, contests, promotions, and surveys related to a television program while watching that television program. The television message system also permits users to compose and send a message to a television program entity. Users can send messages through the television message system to users at personal computers who are connected to the user's television distribution facility through a communications network. The television message system also allows a user to purchase a gift related to television programming for a recipient. The gift may be an electronic gift certificate for pay-per-view programming. The television message system may be based on an interactive television program guide or a set-top box application implemented on a set-top box.



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EE	Estonia			SG	Singapore		

PCT/US 99/19541

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/173 H04N7/14

R. FIELDS SEARCHED

IPC 7 H04N

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
------------	--	-----------------------

1, 2,
6-10,
15-28,
32-37,
42-55,
59-64,
69-78
142, 143,
146-151,
157,
161-166,
172,
176-181,
186

Y Patent family members are listed in annex.

"&" document member of the same patent family

28. 02. 2000

Van der Zaal, R

INTERNATIONAL SEARCH REPORT

Int'l. Application No.

PCT/US 99/19541

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 94 14284 A (DISCOVERY COMMUNICAT INC) 23 June 1994 (1994-06-23) the whole document	92, 93, 95-106, 108-117
Y	WO 96 41478 A (TV GUIDE ON SCREEN) 19 December 1996 (1996-12-19)	142, 143, 146-151, 157, 161-166, 172, 176-181, 186
A	the whole document	1-117
A	WO 98 17064 A (WESTBERG THOMAS E ;KWOH DANIEL S (US); LEUNG ELSIE Y (US); MANKOVI) 23 April 1998 (1998-04-23)	
A	WO 96 25006 A (FLEXYDIAL PTY LTD ;GOSNEY PETER JOHN (AU)) 15 August 1996 (1996-08-15) page 1, line 8 - line 16 page 19, line 17 -page 20, line 22 page 22, line 20 - line 25 page 30, line 4 - line 17 page 36, line 10 -page 38, line 21 page 46, line 19 -page 48, line 18 figures 1-5, 13	118-141

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/ 19541

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims: 1-117, 142-186 Television message system in which users send messages to each other or a head end.
2. Claims: 118-141 Television message system in which users can purchase gifts.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/19541

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5583927	A	10-12-1996	WO 9749223 A EP 0901728 A	24-12-1997 17-03-1999
WO 9414284	A	23-06-1994	AT 177277 T AT 176840 T AT 183352 T AT 176841 T AU 4440797 A AU 712157 B AU 4532597 A AU 693775 B AU 5732994 A AU 692427 B AU 5733094 A AU 691479 B AU 5733194 A AU 692428 B AU 5733294 A AU 5736394 A AU 5845894 A AU 5869894 A AU 6066798 A AU 6066898 A BR 9307619 A BR 9307620 A BR 9307621 A BR 9307622 A BR 9307624 A BR 9307625 A CA 2151456 A CA 2151457 A CA 2151458 A CA 2151459 A CA 2151460 A CA 2151461 A CA 2151462 A CN 1093211 A CN 1090451 A CN 1090452 A CN 1096151 A CN 1090453 A CN 1090454 A DE 69323560 D DE 69323560 T DE 69323562 D DE 69323562 T DE 69323767 D DE 69323767 T DE 69326020 D EP 0673578 A EP 0673579 A EP 0673580 A EP 0673581 A	15-03-1999 15-03-1999 15-08-1999 15-03-1999 29-01-1998 28-10-1999 05-02-1998 09-07-1998 04-07-1994 11-06-1998 04-07-1994 21-05-1998 04-07-1994 11-06-1998 04-07-1994 04-07-1994 22-06-1994 04-07-1994 04-06-1998 04-06-1998 15-06-1999 10-08-1999 15-06-1999 15-06-1999 15-06-1999 31-08-1999 23-06-1994 23-06-1994 23-06-1994 23-06-1994 23-06-1994 09-06-1994 23-06-1994 05-10-1994 03-08-1994 03-08-1994 07-12-1994 03-08-1994 03-08-1994 25-03-1999 23-09-1999 25-03-1999 23-09-1999 08-04-1999 21-10-1999 16-09-1999 27-09-1995 27-09-1995 27-09-1995 27-09-1995
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		EP 0856227 A	05-08-1998
		JP 11505094 T	11-05-1999
		PL 323914 A	27-04-1998
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		BR 9712352 A	31-08-1999
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		AU 4614096 A	27-08-1996
		JP 11500275 T	06-01-1999
		SG 34383 A	06-12-1996



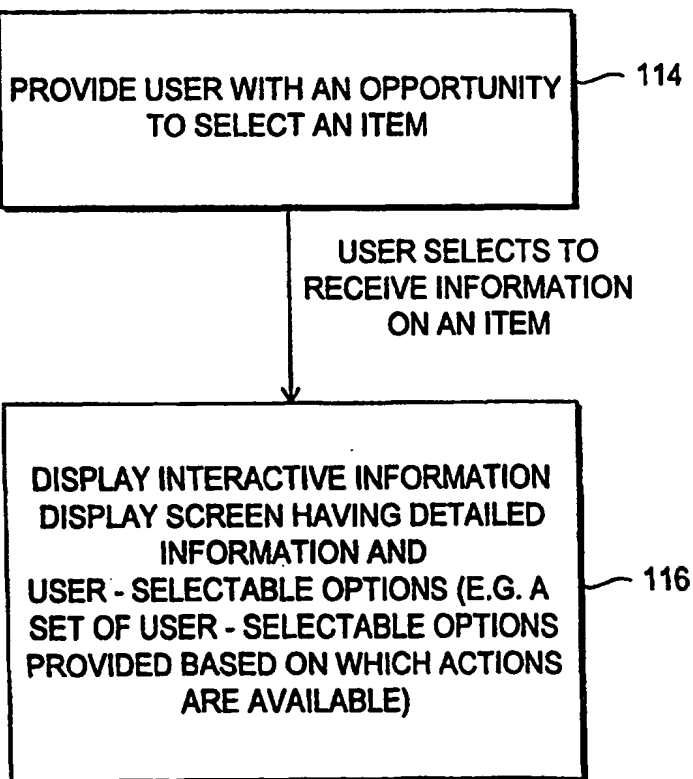
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04N 5/445		A1	(11) International Publication Number: WO 00/28734
			(43) International Publication Date: 18 May 2000 (18.05.00)
(21) International Application Number: PCT/US99/26835 (22) International Filing Date: 12 November 1999 (12.11.99) (30) Priority Data: 60/108,270 12 November 1998 (12.11.98) US 60/110,262 30 November 1998 (30.11.98) US 60/110,491 1 December 1998 (01.12.98) US 09/356,268 16 July 1999 (16.07.99) US (71) Applicant: UNITED VIDEO PROPERTIES, INC. [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US). (72) Inventors: RUDNICK, David, M.; 3049 South Adams Street, Denver, CO 80210 (US). ELLIS, Michael, D.; 1300 King- wood Place, Boulder, CO 80304 (US). HERRINGTON, W., Benjamin; 725 W. 20th Street, Tulsa, OK 74107 (US). WILLIAMSON, Steven, C.; 2720 S. Elder Avenue, Broken Arrow, OK 74012 (US). HARDY, Suzanne, D.; 9810 East Colorado Avenue, #210, Denver, CO 80231 (US). (74) Agents: TREYZ, G., Victor et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

(54) Title: PROGRAM GUIDE WITH INTERACTIVE INFORMATION DISPLAY SCREEN

(57) Abstract

An interactive television program guide having interactive information display screens is provided. Interactive information display screens may be accessed by selecting an item. Interactive information display screens may include detailed information on the selected item or package and may include user-selectable options. The user-selectable options may be program guide features which have been configured to be exercised in specific connection to the selected item. The user-selectable options which are displayed depend on which program guide features are available to be exercised in specific connection with the selected item and depend on information which is associated with the selected item.



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CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

PROGRAM GUIDE WITH INTERACTIVE
INFORMATION DISPLAY SCREEN

Background of the Invention

This invention relates to interactive
5 television program guide systems, and more
particularly, to interactive television program guide
systems having interactive information display screens.

Cable, satellite, and broadcast television
systems provide a large number of television channels.
10 Television viewers have traditionally consulted printed
television program schedules to obtain programming
information. More recently, electronic television
program guides have been developed to allow television
program information to be displayed on a viewer's
15 television.

Interactive television program guides
("program guides") typically offer program guide
features to aid in viewer television operation. Some
program guide systems include a program guide feature

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for displaying an information display screen for a specific program. The information display screens provided by such program guide systems are usually limited in the content and volume of information
5 provided. For example, a typical information screen may contain a description of a selected program, but would not contain information on the channel or network for that program and would not contain information on program packages related to the program. In addition,
10 program guide features such as features related to setting parental controls, setting reminders, selecting programs for recording, ordering programs, etc., are unavailable on information display screens that contain channel, network, or package information.

15 It is therefore an object of the present invention to provide a program guide that has an interactive information display screen.

It is also an object of the present invention to provide a program guide that has an interactive
20 information display screen on which detailed information on a program or service is provided and on which there are a plurality of user-selectable features.

Summary of the Invention

25 These and other objects of the invention are accomplished in accordance with the principles of the present invention by providing a program guide having an interactive information display screen. The interactive information display screen may include a
30 detailed description of a program, channel, network, package of programs, etc., and user-selectable options.

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A user may access the interactive information display screen by selecting a programming-related item such as a program, a channel, a network, or a program grouping (e.g., a purchasable package, a program series, a mini-series, a sports series, etc.). Other types of television content supported by the program guide may also be selectable items, if desired. When an item is selected (e.g., by pressing a remote control "info" key for more information), the program guide may display the interactive information display screen, which may have a detailed description of the selected item and user-selectable options. The options in the interactive information display screen are program guide features (e.g., record, parental lock, profile, e-mail, purchase, etc.) which are available for the selected item and which are to be exercised in specific connection with the selected item. The options available in an interactive information display screen may depend on which of the different items was selected in accessing the interactive information display screen and may further depend on the information associated with the selected item.

The interactive information display screen may include video, still images, advertisements, or status indicators. Video, still images, or advertisements may be selectable to access further program guide display screens.

The interactive information display screen is preferably accessible from any program guide display screen. The user-selectable options that may be provided when an interactive information display screen is accessed by selecting an item include: a parent control option, a preference profile option, a purchase

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option, a view option, a tune-to-channel option, a record option, an other channel/time option, an e-mail option, a web page option, a new option, a related network/channel option, a program grouping component
5 option, a data service option, an application option, a favorites option, an exit option, a local service option, a last option, a reminder option, and a package option.

Depending on display-size limitations, the
10 program guide may allow the user to scroll through options or information in order to display additional information or options that have not yet been displayed.

When displaying the interactive information
15 display screen, the program guide may determine which user-selectable options are to be displayed for a selected item. This determination depends on the item selected (e.g., whether a program, network, channel, or other item was selected) and may further depend on
20 information associated with the selected item (e.g., which program, which channel, which network, etc.). The program guide may rename options based on the selected item and based on information associated with the selected item.

25 The detailed information may include information on a program title, program description, cast, director, awards, reviews, ratings, duration, channel number, channel call numbers, network affiliation, channel air times, channel logo, category,
30 channel name, etc.

Further features of the invention, its nature and various advantages will be more apparent from the

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accompanying drawings and the following detailed description of the preferred embodiments.

Brief Description of the Drawings

FIG. 1 is a schematic diagram of an
5 illustrative data-relay architecture for a program guide system in accordance with the present invention.

FIG. 2 is a diagram of a client/server architecture for a program guide system in accordance with the present invention.

10 FIG. 3 is a diagram of a combined client/server and data-relay architecture for a program guide system in accordance with the present invention.

FIG. 4a is a diagram of illustrative program guide display screens and an illustrative interactive
15 information display screen that may be provided when an interactive information display feature is selected in accordance with the present invention.

FIG. 4b is a diagram of an illustrative embodiment of an interactive information display screen
20 for a program in accordance with the present invention.

FIG. 4c is a diagram of an illustrative embodiment of an interactive information display screen for a pay-per-view channel in accordance with the present invention.

25 FIG. 4d is a diagram of an illustrative embodiment of an interactive information display screen for a channel in accordance with the present invention.

FIG. 4e is a diagram of an illustrative embodiment of an interactive information display screen
30 for a program in accordance with the present invention.

FIG. 5 is a flow chart of illustrative steps involved in providing a program guide interactive

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information display feature in accordance with the present invention.

FIG. 6a is a diagram of an illustrative program guide display screen, an illustrative
5 interactive information display screen that may be provided when an item is selected for information, and an interactive information display screen that may be provided when a reminder option is selected in accordance with the present invention.

10 FIG. 6b is a flow chart of illustrative steps involved in providing an interactive information display screen having a reminder option in accordance with the present invention.

FIG. 7a is a diagram of an illustrative
15 program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected for information, and an illustrative display screen that may be provided when a view option is selected in accordance with the
20 present invention.

FIG. 7b is a flow chart of illustrative steps involved in providing an interactive information display screen having a view option in accordance with the present invention.

25 FIG. 7c is a diagram of an illustrative display screen for a listing of music channels, and an illustrative interactive information display screen that may be provided when an item is selected in accordance with the present invention.

30 FIG. 7d is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when a channel is selected for information,

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and an illustrative display screen that may be provided when a view option is selected in accordance with the present invention.

FIG. 8a is a diagram of an illustrative
5 program guide display screen, an illustrative
interactive information display screen that may be
provided when an item is selected, and a display screen
that may be provided when a tune-to-channel option is
selected in accordance with the present invention.

10 FIG. 8b is a flow chart of illustrative steps
involved in providing an interactive information
display screen having a tune-to-channel option in
accordance with the present invention.

FIG. 9a is a diagram of an illustrative
15 program guide display screen, an illustrative
interactive information display screen that may be
provided when an item is selected, and an illustrative
interactive information display screen that may be
provided when a parental option is selected in
20 accordance with the present invention.

FIG. 9b is a flow chart of illustrative steps
involved in providing an interactive information
display screen having a parental option in accordance
with the present invention.

25 FIG. 10a is a diagram of an illustrative
program guide display screen, an illustrative
interactive information display screen that may be
provided when an item is selected, and an illustrative
interactive information display screen that may be
30 provided when a purchase option is selected in
accordance with the present invention.

FIG. 10b is a flow chart of illustrative
steps involved in providing an interactive information

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display screen having a purchase option in accordance with the present invention.

FIG. 11a is a diagram of an illustrative program guide display screen, an illustrative
5 interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when an other channel/time option is selected in accordance with the present invention.

10 FIG. 11b is a flow chart of illustrative steps involved in providing an interactive information display screen having an other channel/time option in accordance with the present invention.

FIG. 12a is a diagram of an illustrative
15 program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when a profile option is selected in
20 accordance with the present invention.

FIG. 12b is a flow chart of illustrative steps involved in providing an interactive information display screen having a profile option in accordance with the present invention.

25 FIG. 13a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when item is selected, and an illustrative interactive information display screen that may be
30 provided when a program grouping option is selected in accordance with the present invention.

FIG. 13b is a diagram of an illustrative program guide display screen, an illustrative

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interactive information display screen that may be provided when item is selected, and an illustrative interactive information display screen that may be provided when a program grouping option is selected in accordance with the present invention.

FIG. 13c is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a program grouping option in accordance with the present invention.

10 FIG. 14a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when item is selected, and an illustrative interactive information display screen that may be provided when a record option is selected in accordance with the present invention.

FIG. 14b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a record option in accordance with the present invention.

FIG. 15a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and illustrative interactive information display screens that may be provided when a related network/channel option is selected in accordance with the present invention.

FIG. 15b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a related network/channel option in accordance with the present invention.

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FIG. 16a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and illustrative
5 interactive information display screens that may be provided when a related network option, a current program option, or an upcoming program option is selected in accordance with the present invention.

FIG. 16b is a flow chart of illustrative
10 steps involved in providing an illustrative interactive information display screen having a related network option, a current program option, or an upcoming program option in accordance with the present invention.

15 FIG. 17a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and illustrative interactive information display screens that may be
20 provided when a web page option or a chat option is selected in accordance with the present invention.

FIG. 17b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a web page option or
25 a chat option in accordance with the present invention.

FIG. 18a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and an illustrative
30 interactive information display screen with a status indicator in accordance with the present invention.

FIG. 18b is a flow chart of illustrative steps involved in providing an illustrative interactive

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information display screen having a status indicator in accordance with the present invention.

FIG. 19a is a diagram of an illustrative program guide display screen, an illustrative
5 interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen with an overlay that may be provided when an option is selected in accordance with the present invention.

10 FIG. 19b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having an overlay in accordance with the present invention.

FIG. 20a is a diagram of an illustrative
15 program guide display screen, an illustrative interactive information display screen having scrollable options that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when the options
20 are scrolled in accordance with the present invention.

FIG. 20b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having scrollable options in accordance with the present invention.

25 FIG. 21a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and an illustrative display screen for program listings that may be
30 provided when a program listing option is selected in accordance with the present invention.

FIG. 21b is a flow chart of illustrative steps involved in providing an illustrative interactive

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information display screen having a program listings option in accordance with the present invention.

FIG. 22a is a diagram of an illustrative program guide display screen, an illustrative
5 interactive information display screen having an exit option, and an illustrative interactive information display screen having a last option in accordance with the present invention.

FIG. 22b is a flow chart of illustrative
10 steps involved in providing an illustrative interactive information display screen having an exit or last option in accordance with the present invention.

FIG. 23a is a diagram of an illustrative program guide display screen, an illustrative
15 interactive information display screen having scrollable information that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when information is scrolled in accordance with the present
20 invention.

FIG. 23b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having scrollable information in accordance with the present invention.

FIG. 24a is a diagram of an illustrative program guide display screen, an illustrative
25 interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when a favorite channel option is selected in
30 accordance with the present invention.

FIG. 24b is a flow chart of illustrative steps involved in providing an illustrative interactive

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information display screen having a favorite option in accordance with the present invention.

FIG. 25a is a diagram of an illustrative program guide display screen, an illustrative
5 interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when a local channel option is selected in accordance with the present invention.

10 FIG. 25b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a local channel option in accordance with the present invention.

FIG. 26a is a diagram of an illustrative
15 program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and an illustrative interactive information display screen that may be provided when a program grouping component option is
20 selected in accordance with the present invention.

FIG. 26b is a diagram of an illustrative program guide display screen, an illustrative
interactive information display screen that may be provided when an item is selected, and an illustrative
25 interactive information display screen that may be provided when a program grouping component option is selected in accordance with the present invention.

FIG. 26c is a flow chart of illustrative steps involved in providing an illustrative interactive
30 information display screen having a program grouping component option in accordance with the present invention.

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FIG. 26d is a diagram of an illustrative interactive information display screen that may be provided when an item is selected in accordance with the present invention.

5 FIG. 27 is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having a graphic image, a video display, or an advertisement in accordance with the present invention.

10 FIG. 28a is a diagram of an illustrative interactive information display screen that may be provided when an item is selected and illustrative interactive information display screens that may be provided when an e-mail option is selected in
15 accordance with the present invention.

FIG. 28b is a flow chart of illustrative steps involved in providing an illustrative interactive information display screen having an e-mail option in accordance with the present invention.

20 FIG. 29a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and illustrative interactive information display screens that may be
25 provided when a data service option or an application option is selected in accordance with the present invention.

FIG. 29b is a flow chart of illustrative steps involved in providing an illustrative interactive
30 information display screen having a data service option or an application option in accordance with the present invention.

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FIG. 30a is a diagram of an illustrative program guide display screen, an illustrative interactive information display screen that may be provided when an item is selected, and illustrative
5 interactive information display screens that may be provided when a video option is selected in accordance with the present invention.

FIG. 30b is a flow chart of illustrative steps involved in providing an illustrative interactive
10 information display screen having a video option in accordance with the present invention.

Detailed Description of the Preferred Embodiments

An illustrative interactive television program guide system 50 in accordance with the present
15 invention is shown in FIG. 1. Main facility 52 includes a program guide database 54 for storing program guide information (e.g., television program listings data, program-related information, channel listings data, channel-related information, network
20 listings data, network-related information, package listings data, package-related information, pay-per-view ordering information, television program promotional information, program guide Internet-related information, etc.).

25 Main facility 52 preferably includes a processor to handle information distribution tasks. Information from database 54 may be transmitted in parallel via communication links such as communications link 58 to multiple television distribution facilities
30 such as television distribution facility 56. Communications link 58 may be a satellite link, a telephone network link, an Internet link, a fiber optic

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link, a combination of such links, or another suitable communications path. Communications link 58 may pass through one or more facilities that are used to distribute television programming or other facilities.

5 Text, graphics, and video data may be transmitted over link 58. If it is desired to transmit video signals over communications link 58, a relatively high bandwidth link such as a satellite link may be preferable to a relatively low bandwidth link.

10 Television distribution facility 56 is a facility for distributing television signals to viewers, such as a cable system headend, a broadcast distribution facility, or a satellite television distribution facility.

15 The program guide information transmitted by main facility 52 to television distribution facility 56 includes television program listings data such as program times, channels, titles, descriptions, etc. Transmitted program guide information includes pay
20 program data such as pricing information for individual programs and subscription channels, time windows for ordering programs and channels, telephone numbers for placing orders that cannot be impulse ordered, etc. Transmitted program guide information may also include
25 a detailed description of program guide television content such as movie reviews, ratings, network affiliation, associated services, program director, cast, channel call letters, full channel name, air times, service description, logo, package title,
30 package components, web links, e-mail information, chat information, video previews, merchandise information, still graphics, video, advertisements, etc. Television

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distribution facility 56 may include equipment for accessing and communicating on the Internet.

Television distribution facility 56 may distribute program guide information received from main
5 facility 52 to user television equipment 61 via communications paths 60. User television equipment 61 may be any suitable equipment for providing television that contains sufficient processing capabilities to implement an interactive television program guide. If
10 desired, user television equipment 61 may have sufficient processing capabilities to implement other applications such as e-mail or chat applications.

Communications paths 60 may be cable links, fiber optic links, satellite links, broadcast links,
15 other suitable links, or a combination of such links. Any suitable communications scheme may be used to transmit data over paths 60, including in-band transmissions, out-of-band transmissions, digital transmissions, analog transmissions, cable
20 transmissions, satellite transmissions, over-the-air transmissions, multichannel multipoint distribution services (MMDS) transmissions, etc.

Communications paths 60 preferably have sufficient bandwidth to allow television distribution
25 facility 56 to distribute television programming, program listings information, advertisements, and other information to user television equipment 61. Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to user television
30 equipment 61 via communications paths 60. If desired, some of the data may be distributed to user television equipment 61 by one or more distribution facilities that are separate from television distribution facility

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56 using communications paths that are partly or completely separate from communications paths 60.

The data distribution technique that is used to distribute data on paths 60 may depend on the type
5 of information that is being distributed. For example, text and graphics may be distributed over an out-of-band channel using an out-of-band modulator or distributed in the vertical blanking interval lines of an analog video channel. Video information may also be
10 distributed in this way, although large quantities of video information may be more efficiently distributed using one or more digital channels on path 60. Such digital channels may also be used for distributing text and graphics.

15 Each user television equipment device 61 has a receiver which is typically a set-top box such as set-top box 62. A receiver may also be other suitable television equipment such as an advanced television receiver into which circuitry similar to set-top-box
20 circuitry has been integrated, a personal computer television (PC/TV), or a personal computer with television capabilities (provided, for example, using a television tuner card). For illustrative purposes, the present invention will be described in the context of
25 user television equipment 61 that uses set-top boxes.

Each set top box 62 preferably contains a processor to handle tasks associated with implementing a program guide application on set-top box 62. Each set-top box 62 may be connected to a videocassette
30 recorder 66 or other recording device such as a digital recording device so that selected television programs may be recorded. For illustrative purposes, the present invention will be described in the context of

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videocassette recorder 66. Videocassette recorder 66 is typically connected to a television 68 or other display device. For illustrative purposes, the present invention will be described in the context of
5 television 68. To record a program, set-top box 62 tunes to a particular channel and sends control signals to videocassette recorder 66 (e.g., using infrared transmitter 70) that instructs video-cassette recorder 66 to start and stop recording at the appropriate
10 times.

During use of the interactive television program guide implemented on set-top box 62, television program listings, advertisements, programming information, and other information may be displayed on
15 television 68. The user may control set-top box 62, videocassette recorder 66, and television 68 using one or more remote controls or using any other suitable user input interface device such as a wireless keyboard, mouse, trackball, dedicated set of keys,
20 voice recognition system, personal digital assistant, display remote, etc. A remote control may be a display remote. When a display remote is used, the program guide may display interactive information display screens on the display screen of the display remote. A
25 display remote may include a touch pad for receiving user input. For example, a user may select options by touching specific active options on the display screen of the remote. Program guide systems with display remotes are described in United States provisional
30 application No. 60/138,868, filed June 11, 1999, which is incorporated herein in its entirety. For clarity, the present invention is described primarily in the context of a program guide system in which the user

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interface device is a remote control. A typical remote control 72 has arrow keys for controlling the position of a highlight region in a program guide display screen and a data entry key such as an OK, ENTER, or ACCEPT
5 key (hereinafter "OK key"). The remote control may also have other remote control keys such as an information "INFO" key, a record key, channel up or down keys, volume control keys, numeric keys, etc.

Certain program guide features, such as pay
10 program purchasing, the purchasing of products or services, and data collection functions, may require that user television equipment 61 transmit data to television distribution facility 56 over communications
15 paths 60. If desired, such data may be transmitted over telephone lines or other separate communications paths. If features such as these are provided using facilities separate from television distribution
20 facility 56, some of the communications involving user television equipment 61 may be made directly with the separate facility (not shown).

Set top box 62 may have sufficient processing capabilities to support applications such as e-mail, chat, data services, video games, etc. User television equipment 61 may include equipment for recording
25 portions of a video or for extracting an image from a video.

If desired, an illustrative interactive television program guide may be implemented using a data-relay architecture. In such an architecture,
30 television distribution facility 56 may serve as a data relay site and user television equipment 61 may be a data destination site. For example, as television distribution facility 56 receives information from main

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facility 52, television distribution facility 56 may continuously or periodically distribute information to user television equipment 61. In a data-relay architecture, a program guide may be implemented on
5 user television equipment 61 using a database at user television equipment 61 (e.g., database 64) for storing program guide information. Television distribution facility 56 may also poll set-top boxes periodically for certain information (e.g., pay program account
10 information or information regarding programs that have been purchased and viewed using locally-generated authorization techniques).

The interactive television program guide system may be implemented using a client-server
15 architecture or using a combination of data-relay and client-server architectures. An illustrative interactive television program guide system 80 that is based on a client-server architecture is shown in FIG. 2. As with system 50 of FIG. 1, program guide
20 system 80 may include a main facility 52 having a program guide database 54. Because the system of FIG. 2 uses a client-server arrangement, the program guide is partially implemented on a server and partially implemented on a client. The server may be a
25 server such as server 82. Server 82 may be at television distribution facility 84 or at another suitable location. The client may be based on user television equipment 61 (e.g., set-top box 88). At television distribution facility 84, program guide
30 information may be stored and maintained in database 86. Database 86 may be accessed by a client (e.g., set-top box 88) as needed. For example, set-top box 88

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may transmit a message to server 82 requesting a specific video clip for the program guide.

An illustrative interactive television program guide system 90 that uses a combination of client-server and data-relay architectures is shown in FIG. 3. In such a combined architecture, the program guide may be partially implemented on a server and partially implemented on a client. Television distribution facility 94 may continuously (or periodically) relay a portion of program guide information to user television equipment 99. User television equipment 99 may include database 96 for storing program guide information. Television distribution facility 94 may include server 91 and database 93 for storing a portion of program guide information received from main facility 52. Program guide data stored in database 93 may be distributed to user television equipment 99 as needed. Interactive television program guide systems such as system 90 may also be implemented in a more fully server-based architecture if desired.

The server 91 at the television distribution facility 94 may use database 93 for storing program guide information, as well as graphics, displays, or other software involved in producing program guide displays on user television equipment 99. User television equipment 99 may receive inputs from the user requesting access to certain user television equipment features, operations, or data. The television distribution facility 94 may execute instructions necessary to implement desired features to support the desired operations, or to provide data access or the television distribution facility 94 may

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operate in conjunction with user television equipment
99 to execute the instructions necessary to implement
the desired features to support the desired operations
or to promote access to the desired data. Examples of
5 program guide systems with on-demand data
supplementation capabilities are provided in Ellis
et al. U.S. patent application Serial No. 09/330,519,
filed June 11, 1999, which is hereby incorporated by
reference herein in its entirety. Examples of program
10 guide systems with continuous data streams and
client/server data supplementation capabilities are
provided Hassell et al., U.S. patent application Serial
No. 09/332,625, filed June 11, 1999, which is hereby
incorporated by reference herein in its entirety.

15 For clarity, the present invention is
sometimes described primarily in the context of program
guides that are implemented primarily on user
television equipment rather than in the context of
program guides that are implemented using a server-
20 based architecture.

As shown in FIG. 4a, the program guide of the
present invention may display illustrative program
guide display screens 100, 104, 106, 686, and 688 and
illustrative interactive information display screen
25 102. Display screen 100 contains program listings and
corresponding channel identifiers in a grid format.
Display screen 104 contains a list of packages and a
corresponding network identifier. Display screen 106
contains a program category or genre such as sports,
30 comedy, movies, news, etc. and a corresponding list of
programs. Screen 108 may include video of a program.
Screen 108 may be a program guide display screen
provided by the program guide or may contain a

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television program provided by the user television equipment when the guide is running in the background. The program guide may display other program guide display screens for displaying program listings or
5 identifying channels (e.g., an overlay including a list of music channels in program guide display screen 686), networks, packages, program groupings (e.g., a program grouping list in program guide display screen 288). Display screens may be partial or full screen and the
10 information displayed therein may be sorted. Additional illustrative interactive information display screen are displayed in FIG. 4b, FIG. 4c, FIG. 4d, and FIG. 4e.

A user may select a programming-related item
15 from program guide display screens such as display screens 100, 104, 106, 108 (if screen 108 is provided by the program guide), 686, and 688 where a program-related item is a program listing, channel, network, or a program grouping (e.g., a package, program series,
20 mini-series, sports series, etc.). As defined herein, a program-related item (also called simply an item) may also be any other category of television content being provided through the program guide. A television program not being provided by the guide may also be a
25 program-related item in the sense that this program may be selected by the user with the program guides. Each item may identify or be related to a specific program, channel, network, etc. Each specific item may have information associated therewith such as a detailed
30 description of the specific item (e.g., program title, rating, channel identifier, related e-mail address, related web page address, program description, network affiliation information, program grouping components,

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related chat sessions, actors, directors, showing time, other showing times or channels, etc.). The information may have been provided as part of the program listings data supplied to the user television equipment. The information may be in a format suitable for display and may be in a format that is suitable for processing to determine the characteristics of the specific item.

An item may be selected by, for example, positioning a highlight region on program listing and pressing an INFO key, positioning a highlight region on a channel grid cell in a program listings display screen and pressing an INFO key, pressing an INFO key while viewing a program, positioning a highlight region on a portion of program guide display screen identifying a music channel and pressing an INFO key, positioning a highlight region on a program grouping listing in a favorite program groupings display screen and pressing an INFO key, positioning a highlight region on a network identification in a network listings display screen and pressing an INFO key, etc. An item may be selected from any suitable program guide display screen which includes selectable portions. In addition, a program item may be selected by selecting a screen containing a television program.

The program guide may display different interactive information display screens depending on the item selected (e.g., whether a program listing, channel, network, program grouping, or program was selected to access the interactive information display screen). The options in an interactive information display screen are program guide features (e.g., record, parental lock, profile, e-mail, purchase, etc.)

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that are available for the selected item and that may be exercised specifically in connection with the selected item. The options available in an interactive information display screen may depend on which of the
5 different items have been selected to access the interactive information display screen and may further depend on the information associated with the selected item. For example, the interactive information display screen that is displayed when a program listing is
10 selected (e.g., screen 102 of FIG. 4a) is different from the interactive information display screen that is displayed when a channel is selected (e.g., the interactive information display screen of FIG. 4d).

When a user selects an item, the program
15 guide may display an interactive information display screen such as interactive information display screen 102 of FIG. 4a. Interactive information display screen 102 may include detailed information portion 110 and may include a set of user-selectable options 112.
20 Interactive information display screen 102 may also include other information such as graphic images, video, advertisements, status indicators, graphic animation, etc.

The content of interactive information
25 display screen 102 may depend on whether a program, channel, network, program grouping, or other item was selected. For example, detailed information portion 110 may include several lines of text providing information appropriate for display for a program which
30 may include program-content related information such as plot, actors, ratings, reviews, director, channel number, other showings, program category, etc. User-selectable options 112 may include options that may

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depend on which type of item is selected and the information associated with the selected item.

Depending on the volume of information to be displayed, the user may be provided with an opportunity
5 to scroll to detailed information portion 110. A user may be allowed to scroll through (e.g., scroll up or down) information by pressing up or down arrow keys or other suitable navigation keys on a remote control. Detailed information portion 110 may include one or
10 more arrows such as arrow 105 to indicate that the user may scroll to view more information. Detailed information 110 may provide sufficient information to allow a user to exercise (i.e., use or invoke) user-selectable options 112 in an informed way.

15 Scrolling may be provided for user-selectable options 112 depending on the number of user-selectable options that are available in connection with the selected item. A user may be allowed to scroll to options which are available but not yet displayed by
20 pressing left or right arrow keys or other navigation keys on a remote control. User-selectable options 112 may include arrows such as arrow 103 to indicate that the user may scroll to more options.

The options available in the region of screen
25 102 that is provided for user-selectable options 112 may depend on the nature of the selected item and the information associated with the item. The particular options that are provided may be those needed to exercise certain program guide features that are
30 available for the item that was selected. A program guide user may select an option by positioning a highlight region on a desired option and using arrow keys pressing an OK key.

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Illustrative steps involved in providing an interactive information display screen such as interactive information display screen 102 of FIG. 4a are shown in FIG. 5. At step 114, the program guide may provide a user with an opportunity to select an item for additional information. The program guide may provide the user with an opportunity to select an item to receive additional information from any program guide display screen that includes an identifier for an item or from any screen that includes video for an item. The opportunity to select an item may be provided to a user from various program guide display screens such as a program listings display screen, a favorite programs display screen, a genre display screen, etc. An interactive information display screen for a selected item may provide a user with the opportunity to select another item, which may be related to the selected item. The opportunity to select an item (e.g., a program item) may also be provided to the user from a screen containing the video for a program.

At step 116, in response to the selection of an item, the program guide may display an interactive information display screen such as screen 102 of FIG. 4a. The interactive information screen may include detailed information on an item. The user-selectable options may vary. The user-selectable options may be options for exercising program guide features that are available specifically in connection with the selected item. In addition to depending on whether a program (program listing or program video), a channel, a network, a program grouping or other item has been selected, options may vary depending on which item

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(e.g., which program, which channel, which network, which program grouping, etc.) has been selected. For example, options for a program that is currently airing may differ from options for a program that will air
5 tomorrow. Options and the availability of options are discussed further below.

User-selectable options for an interactive information display screen may include a reminder option. For example, as shown in FIG. 6a, interactive
10 information display screen 120 includes a reminder option 122 along with four other options (parental lock option 124, preference profile option 126, record option 128, and tune-to-channel option 130).
Interactive information display screen 120 may be
15 accessed from program listings display screen 118 by selecting a desired program listing. As discussed above, a user may select a program listing by, for example, positioning a highlight region on a listing such as a listing for an episode of Seinfeld (as shown)
20 and pressing an INFO key. In response, the program guide may display interactive information display screen 120, which includes a detailed description of the selected episode of Seinfeld and user-selectable options 122, 124, 126, 128, and 130.

25 Reminder option 122 may be selected by positioning a highlight region on reminder option 122 and pressing a remote control OK key. When reminder option 122 is selected, the program guide may display interactive information display screen 134, which may
30 include the same detailed description of the Seinfeld episode and which may include reminder controls 136 for activating or deactivating a reminder to view the selected episode of Seinfeld. The reminder controls

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136 may also allow the user to set, delete, or modify a series reminders. Program guide systems with a series reminder capability are described in copending Knudsen et al. U.S. patent application Serial No. 09/330,792, filed June 11, 1999, which is hereby incorporated by reference herein in its entirety. If desired, interactive information display screens 120 and 134 may include one or more advertisements, such as advertisement 132. The reminder option may be made available when the selected item is a program, and more particularly, when the selected item is a program listing for a program that has not yet started airing. The way in which the reminder option is either available or not available depending on whether the selected item is a program listing is an example of how the options that the system makes available depend on the nature of the selected item.

Illustrative steps involved in providing an interactive information display screen having a reminder option such as interactive information display screen 120 of FIG. 6a are shown in FIG. 6b. At step 292, after a user has selected an item, the program guide may display an interactive information display screen containing additional information. Displaying the interactive information display screen in step 292, may involve the step of displaying a reminder option at step 300. For example, the program guide may display a reminder option when the program guide determines that the selected item is a program listing or a listing for a program grouping such as a series. At step 302, after the user has selected the reminder option and after this selection has been detected at step 300, the program guide may provide the user with an opportunity

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to set, cancel, or modify a reminder to view the item that was selected for more information.

An interactive information display screen may include a view option. For example, as shown in FIG.

5 7a, interactive information display screen 138 includes a view option 140 along with three other options (parental lock option 146, preference profile option 148, and record option 150). Interactive information display screen 138 may be accessed from program
10 listings display screen 142 by selecting a desired program listing. As discussed above, a user may select a program by positioning a highlight region on a listing such as a listing for an episode of Seinfeld (as shown) and by pressing an INFO key. When the
15 program listing is selected, the program guide may display interactive information display screen 138, which includes a detailed description of the program, the selected episode of Seinfeld, along with user-selectable options 140, 146, 148, and 150. View option
20 140 may be selected, for example, by positioning a highlight region on view option 140 and pressing a remote control key (e.g., an OK key). In response, the program guide may tune to the channel showing the selected episode of Seinfeld and may display video 154
25 of the program that is currently on that channel. View option 140 may be an option that is displayed when a selected program is being broadcast (aired), is about to be broadcast, or is available on-demand (e.g., using video-on-demand or near video-on-demand. For digital
30 music programs, an option similar to the view option called "listen" option may be provided to the program guide. If desired, interactive information display screen 138 may include an advertisement 152.

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Illustrative steps involved in providing an interactive information display screen having a view option such as interactive information display screen 138 of FIG. 7a are shown in FIG. 7b. At step 292, after a user had selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying a view option at step 296. Step 296 may involve detecting whether a program, channel, or network item has been selected and may involve renaming the display name for the option. The program guide may display a view option when the program guide determines that a channel, a network, or a program that is being broadcast, is about to be broadcast, or is available on-demand has been selected for more information. If the selected item is a digital music program, the program guide may effectively "rename" the option, from "view" to "listen", as shown in FIG. 7c. At step 316, after a user has selected a view option from the interactive information display screen, the program guide may tune to the channel airing the selected program so that a video of the selected program may be displayed. When the selected program is a digital music program, the program guide may tune to the appropriate music channel and play music programming (e.g., see FIG. 7c). When a user accesses the interactive information display screen by selecting a channel or network, selecting the view option from the interactive information display screen may cause the program guide to tune to the selected channel or network as shown in FIG. 7d.

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An interactive information display screen may include a tune-to-channel option. For example, as shown in FIG. 8a, interactive information display screen 156 may include a tune-to-channel option 158 along with eight other options (record option 162, view option 164, reminder option 166, parental lock option 168, package option 170, preference profile option 172, and other channel/time options 174 and 176). The program guide may display interactive information display screen 156 when a user presses a key such as an INFO key to select a program listing such as a program listing for Seinfeld from program listings display screen 160. Interactive information display screen 156 includes a detailed description of the selected episode of Seinfeld along with user-selectable options 162, 164, 166, 168, 170, 172, 174, and 176. When a user selects tune-to-channel option 158, the program guide may tune to the channel that is scheduled to air the selected episode of Seinfeld and may display video 178 of the program currently being aired on that channel. Tune-to-channel option 158 may be an option that is displayed when the selected item is a future program.

Unavailable options are not typically displayed. For example, a view option would not be available for a selected program that is to be broadcast in the future. If desired, user-selectable options that are unavailable may be displayed but displayed differently. For example, as shown in FIG. 8a, the view option 164 may be dimmed or otherwise visually distinguished from the other options, because the selected episode of Seinfeld is not yet available to be viewed.

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Illustrative steps involved in providing an interactive information display screen having a tune-to-channel option such as interactive information display screen 156 of FIG. 8a are shown in FIG. 8b. At
5 step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying a tune-to-channel option at step
10 304. Step 304 may involve detecting whether a program channel, or network has been selected. The program guide may display a tune-to-channel option when the program guide determines that the selected item is a program, channel, or network. At step 324, after a
15 user has selected the tune-to-channel option, the program guide may tune to the channel for the selected program, may tune to the selected channel, or may tune to a channel for the selected network.

An interactive information display screen may
20 include a parental lock option. For example, as shown in FIG. 9a, interactive information display screen 180 may include a parental lock option 182 along with six other options (purchase option 186, reminder option 188, package option 190, profile option 192, record
25 option 196, and other channel/time option 194). In operation, the program guide may display interactive information display screen 180 when a user selects Apocalypse Now for additional information from program listing display screen 184 (e.g., by pressing an INFO
30 key). Interactive information display screen 180 may include a detailed description (e.g., a description containing information on plot, rating, director, awards, reviews, duration, etc.) for the selected

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program (Apocalypse Now) along with user-selectable options 182, 186, 188, 190, 192, 194, and 196.

When a user selects parental lock option 182, the program guide may provide the user with an
5 opportunity to enter a personal identification code (e.g., using PIN overlay 185). When a user enters a valid code, interactive information display screen 198 may be displayed that includes the same detailed description of Apocalypse Now and that includes
10 parental controls 200 for providing a user with an opportunity to set parental locks. If desired, parental controls may be displayed in an overlay, as discussed further below.

Illustrative steps involved in providing an
15 interactive information display screen having a parental lock option such as interactive information display screen 180 of FIG. 9a are shown in FIG. 9b. At step 292, after a user selects an item, the program guide may display an interactive information display
20 screen. The step of displaying an interactive information display screen, step 292, may involve the step of displaying a parental lock option (step 298). A parental lock option may also be called a parental control option or a parental option. A parental lock
25 option may be displayed when the program guide detects that an item has been selected for more information. Step 298 may involve providing the user with an opportunity to enter a PIN. If a user selects a parental lock option, the program guide may provide the
30 user with an opportunity to set or remove parental controls at step 318. For example, the program guide may provide the user with an opportunity to lock the selected program to prevent it from being viewed by

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those who cannot provide the password. The program guide may provide an opportunity to lock programs based on attributes of the selected program (e.g., the guide may allow the user to lock based on the rating of the selected program). When the selected item is a channel, network, or program grouping, the user may be provided with an opportunity to lock or unlock the selected channel, network, or program grouping (see, for example, FIG. 18a).

10 An interactive information display screen may include a purchase option. For example, as shown in FIG. 10a, interactive information display screen 202 may include a purchase option 204 along with six other options (reminder option 208, parental lock option 210, 15 package option 212, profile option 214, and other channel/time options 216 and 218). In operation, the program guide may display interactive information display screen 202 when a user requests additional information on a selected program listing (e.g., by 20 pressing an INFO key). For example, the user may press the INFO key after having highlighted Apocalypse Now in program listings display screen 206. Interactive information display screen 202 may include a detailed description (containing, e.g., information on plot, 25 rating, director, awards, reviews, duration, etc.) for the selected program (Apocalypse Now) along with user-selectable options 204, 208, 210, 212, 214, 216, and 218. When a user selects purchase option 204, the program guide may display interactive information 30 display screen 220. Screen 220 may include the same detailed description of Apocalypse Now as screen 202 and may include purchasing options 222 for providing the user with an opportunity to purchase a viewing of

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Apocalypse Now (e.g., by entering a code to complete a purchase, by entering an authorization code to view the program, etc.).

Illustrative steps involved in providing an
5 interactive information display screen having a
purchase option such as interactive information display
screen 202 of FIG. 10a are shown in FIG. 10b. At step
292, after a user selects an item, the program guide
may display an interactive information display screen.
10 The step of displaying an interactive information
display screen, step 292, may include the step of
displaying a purchase option (step 306). The program
guide may determine whether the purchase option is
appropriate for the selected item (step 306a). For
15 example, the display of a purchase option would be
inappropriate when the selected item is a program,
network, channel, or program grouping which is
available for purchase. At step 326, after the user
has selected a purchase option, the program guide may
20 provide the user with an opportunity to purchase (or
cancel the purchase of) the selected item. For
example, the program guide may provide instructions to
the user for telephone ordering (see for example
FIG. 19a). Purchasing may involve impulse pay-per-view
25 confirmation, video on demand confirmation, or
telephonic ordering.

An interactive information display screen may
include an other channel/time option. For example, as
shown in FIG. 11a, interactive information display
30 screen 224 may include an other channel/time option 226
along with four other options (a reminder option, a
tune-to-channel option, a parental control option, and
a record option). In operation, the program guide may

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display interactive information display screen 224 after a user has selected a program listing such as the program listing for "E.R." for additional information from program listings display screen 228. Interactive
5 information display screen 224 may include a detailed description (e.g., plot, rating, director, awards, reviews, duration, etc.) of the selected episode of "E.R." along with five user-selectable options including other channel/time option 226. When a user
10 selects other channel/time option 226, the program guide may display information display screen 240, which includes a selectable list of other channel/times (230, 232, 234, and 236) for the selected program (E.R.) along with a detailed description 237 for an episode of
15 E.R. A highlight region may be placed on each item in the list (230, 232, 234, and 236). In response, detailed description 237 dynamically changes to provide a detailed description for the E.R. episode in the list on which the highlight region is placed. When the list
20 of other channel/times cannot be displayed due to size limitations, an arrow 231 may be displayed to indicate that the user may horizontally scroll the list so that items that are available but not yet displayed may be shown (e.g., see FIG. 20a). If desired, the program
25 guide may display an other channel/time option for a specific other showing of the selected item (see for example, see FIG. 10a). When a user selects one of the other channel/time options (e.g., option 234), interactive information display screen 227 may be
30 displayed. Interactive information display screen 227 may include a detailed description for the selected channel/time for the program and a set of user-selectable options for exercising program guide

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features in connection with the selected other channel/time. An option in an interactive information display screen that allows the user to access an interactive information display screen for another item
5 may be considered to be a hyperlink.

Illustrative steps involved in providing an interactive information display screen having an other channel/time option such as interactive information display screen 224 of FIG. 11a are shown in FIG. 11b.
10 At step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying an other channel/time option (step
15 308). An other channel/time option may typically be available when the selected item is a program. At step 308a, the program guide may determine whether the other channel/time option is available for the selected program. For example, the other channel/time option
20 may not be available for a program that does not have any other channel/time showings. At step 328, after a user has selected an other channel/time option, the program guide may display an interactive information display screen for the other channel/time showing of
25 the selected program. Step 328 may include the step of providing the user with an opportunity to select from a list of other channel/times for the selected item.

An interactive information display screen may include a preference profile option. For example, as
30 shown in FIG. 12a, interactive information display screen 244 may include a preference profile option 246 along with five other options (reminder option 250, tune-to-channel option 252, parental option 254, record

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option 256, and other channel/time option 258). In operation, the program guide may display interactive information display screen 244 when a user selects a program listing such as "E.R." for additional
5 information from program listings display screen 248. Interactive information display screen 244 may include a detailed description (e.g., plot, rating, director, awards, reviews, duration, etc.) of the selected episode of "E.R." along with user-selectable options
10 246, 250, 252, 254, 256, and 258. When a user selects preference profile option 246, the program guide may display interactive information display screen 260, which includes the same detailed description of the selected listing of "E.R." and may display user-
15 selectable options 262 for adding attributes of the selected program to a user profile. If desired, user selectable options for adding attributes of the selected program to a user profile may be displayed in an overlay. A program guide preference profile feature
20 is described in copending Ellis et al. U.S. patent application Serial number 09/034,934 filed March 4, 1998 which is hereby incorporated by reference herein in its entirety.

Illustrative steps involved in providing an
25 interactive information display screen having a preference profile option such as interactive information display screen 244 of FIG. 12a are shown in FIG. 12b. At step 292, after a user has selected an item, the program guide may display an interactive
30 information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying a preference profile option (step 310). The preference profile option may

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be available when the program guide determines that the selected item is a program listing, program, a channel, or a network. At step 330, when the user selects a preference profile option, the program guide may
5 provide the user with an opportunity to add information to a user profile. For example, the program guide may allow the user to add an attribute (e.g., the genre) of a selected program listing (or program) to a user profile as a preference. For a network or a channel,
10 for example, the program guide may allow the user to add information indicating a preference for or against a network or a channel.

An interactive information display screen may include a program grouping option where a program
15 grouping may be a package, a program series, a mini-series, a sports series, etc. For example, as shown in FIG. 13a, interactive information display screen 264 may include a program grouping option named package option 266 along with three other options (reminder
20 option 270, purchase option 272, and parental control option 274). In operation, the program guide may display interactive information display screen 264 when a user selects the Truman Show from program listings display screen 268. When the user selects package
25 option 266, interactive information display screen 276 may be displayed, which includes a detailed description of a package that includes the Truman Show. If desired, a list of packages may be displayed which include the Truman Show as part of the package. In
30 addition to the detailed description, interactive information display screen 276 may include user-selectable options 277, 278, 279, and 280, which may be

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exercised in connection with the package (or packages) described in the detailed description 282.

As shown in FIG. 13b, interactive information display screen 424 may include a program grouping option 426 along with six other options (profile option 430, view option 432, program listing option 437, add-to-favorites option 436, purchase option 438 and parental lock option 440). In operation, the program guide may display interactive information display screen 424 when a user selects channel 5 from program listings display screen 428. When a user selects program grouping option 426, the program guide may display interactive information display screen 442. Interactive information display screen 442 may include a list of program groupings that include the earlier-selected channel as a component. After a user selects a program grouping from the list, the program guide may display an interactive information display screen that is appropriate for the selected program grouping. If desired, the list of program groupings may be scrollable (e.g., horizontally).

Illustrative steps involved in providing an interactive information display screen having a package option such as interactive information display screen 264 of FIG. 13a or interactive information display screen 424 of FIG. 13b are shown in FIG. 13c. At step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include step 312 for displaying a program grouping option (e.g., an option for accessing information on a program series, mini-series, sports series, or package containing the

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selected item). The program guide may determine whether a program, channel, or network has been selected and whether the selected program, channel, or network is part of a program grouping (312a). At step 5 332, after the user has selected a program grouping option, the program guide may display an interactive information display screen for a program grouping that includes the earlier selected program, network, or channel. Program guide systems that provide television 10 packages are described in Knudsen et al. U.S. patent application Serial No. 08/944,153, filed October 6, 1997, which is hereby incorporated by reference herein in its entirety.

An interactive information display screen may 15 include a record option. For example, as shown in FIG. 14a, interactive information display screen 224 may include a record option 226 along with five other options (reminder option 230, tune-to-channel option 232, parental control option 234, preference profile 20 option 236, and other channel/time option 238). In operation, the program guide may display interactive information display screen 224 when a user selects a program listing such as the program listing for the program "E.R." from program listings display screen 25 228. Interactive information display screen 224 may include a detailed description of the selected "E.R." episode along with user-selectable options 226, 230, 232, 234, 236, and 238. When the user selects record option 226, the program guide may display interactive 30 information display screen 240. Interactive information display screen 240 may include an overlay for exercising the program guide record feature in connection with the selected program. Interactive

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information display screen 240 may continue to include a detailed description of the selected "E.R." episode and the user-selectable options. If desired, the record options may be displayed as part of the display
5 screen.

Illustrative steps involved in providing an interactive information display screen having a record option such as interactive information display screen 224 of FIG. 14a are shown in FIG. 14b. At step 292,
10 after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying a record option (step 302). A record option
15 may be available when the program guide determines that the user has accessed an interactive information display screen by selecting an item that is a program, a program listing, or a program grouping. At step 322, after a user has selected a record option, the program
20 guide may provide the user with an opportunity to exercise a record feature of the program guide system (e.g., create, delete, or modify a recording) in connection with the selected program. If desired, the program guide system may create a recording of the
25 selected program when the user selects the record option. The recording may be a series recording. Program guide systems with series recording capability are described in copending Knudsen et al. U.S. patent application Serial No. 09/330,792, filed June 11, 1999,
30 which is hereby incorporated by reference herein in its entirety.

For example, the program guide may instruct a videocassette recorder to record the selected program.

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The user may also be provided with an opportunity to set, clear, or modify a recording at a server at a television distribution facility (e.g., television distribution facility 84 of FIG. 2) or other suitable location. A television distribution facility may include a remote media server for performing recording operations. Program guide systems having a record feature are described in Ellis et al. U.S. patent application serial No. 09/332,244, filed June 11, 1999, which is incorporated herein by reference in its entirety. The selected item may also be recorded on a local digital storage device or server. Program guide systems with local digital storage are described in Hassel et al. U.S. patent application serial No. 09/157,256, filed September 17, 1998, which is incorporated herein by reference in its entirety.

An interactive information display screen may include a related channel/network option. For example, as shown in FIG. 15a, interactive information display screen 702 may include a related network option 704 and a related channel option 706 along with two other user-selectable options. In operation, the program guide may display interactive information display screen 702 when a user selects a program listing such as the listing for program 5 from program listings display screen 700. Interactive information display screen 702 may include a detailed description of the selected program (program 5) along with the user-selectable options. Interactive information display screen 702 may include graphic image 701, which is discussed further below. When the user selects related network option 704, the program guide may display interactive information display screen 710. Interactive

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information display screen 710 may include a detailed description of a television network that is related to the selected program (program 5) and user-selectable options for exercising program guide features in
5 connection with the network. When the user selects related channel option 706, the program guide may display interactive information display screen 712. Interactive information display screen 712 may include a detailed description of a television channel related
10 to the selected program (program 5) and user-selectable options for exercising program guide features in connection with the channel. Related network option 704 and related channel option 706 are discussed and displayed together for convenience.

15 Illustrative steps involved in providing an interactive information display screen having a related network/channel option such as interactive information display screen 702 of FIG. 15a are shown in FIG. 15b. At step 292, after a user has selected an item, the
20 program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may include the step of displaying a related network/channel option (step 284). A related network/channel options may be
25 available when the selected item is a program. At step 286a, after the user has selected a related network option, the program guide may display an interactive information display screen for the network. At step 286b, after the user has selected a related channel
30 option, the program guide may display an interactive information display screen for the channel. The channel may be a television channel that is carrying the selected program (e.g., program 5 in FIG. 15a).

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The network may be a television network that is affiliated with the selected program or that is affiliated with a channel that carries the selected program.

5 An interactive information display screen may include a related network option, a current program option, or an upcoming program option. For example, as shown in FIG. 16a, interactive information display screen 550 may include a related network option 552, a
10 current program option 554, and an upcoming program option 556 and one other user-selectable option. Interactive information display screen 550 may include video portion 558, which is discussed further below. In operation, the program guide may display interactive
15 information display screen 550 when a user selects an item such as a channel (as shown) or a network from a program guide display screen. When the selected item is a network, interactive information display screen 550 may include a related channel option rather than a
20 related network option. When the user selects related network option 552, the program guide may display interactive information display screen 560. Interactive information display screen 560 may include a detailed description for a television network related
25 to the earlier selected channel (e.g., the channel is a network affiliate) along with user-selectable options for exercising program guide features in connection with the network. When the user selects current program option 554, the program guide may display
30 interactive information display screen 562. Interactive information display screen 562 may include a detailed description for a current program on the channel (or a network if a network had been selected

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earlier) and user-selectable options for exercising program guide features in connection with the current program. When the user selects upcoming program option 556, the program guide may display interactive
5 information display screen 564. Interactive information display screen 562 may include a detailed description for an upcoming program on the channel (or a network if a network had been selected earlier) and user-selectable options for exercising program guide
10 features in connection with the upcoming program.

Illustrative steps involved in providing an interactive information display screen having a related network option, a current program option, or an upcoming program option such as interactive information
15 display screen 550 of FIG. 16a are shown in FIG. 16b. At step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying the interactive information display screen, step 292, may include the
20 steps of displaying a related network option (step 566), displaying a current program option (step 568), or displaying an upcoming program option (step 570). The program guide may determine that the related network option is available by determining that the
25 selected item is a channel. The program guide may determine that the current program or upcoming program options are available by determining that the selected item is a channel or a network. If the user selects a related network option, the program guide may display
30 an interactive information display screen for a network related to the earlier selected channel at step 572. If the user selects a current program option, the program guide may display an interactive information

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display screen for the current program on the earlier selected channel or network at step 574. If the user selects an upcoming program option, the program guide may display an interactive information display screen
5 for an upcoming program on the earlier selected channel or network at step 576. The related network, current program, and upcoming program options are discussed together for convenience. These options may be displayed together, separately, or in combination.

10 An interactive information display screen may include Internet-related options such as a web page option, a chat option, or an e-mail option (which is discussed further below). For example, as shown in FIG. 17a, interactive information display screen 580
15 may include web page option 582, chat option 584 and three other user-selectable options. In operation, the program guide may display interactive information display screen 580 when a user selects an item such as a program or program listing. Interactive information
20 display screen 580 may include a detailed description of the selected item along with the user-selectable options. If the user selects web page option 582, the program guide may display interactive information display screen 588. Interactive information display
25 screen 588 may include a full or partial screen display 590 for a web page that is related to the selected item. The program guide may have launched a related application for web page viewing and may have provided a related web page address to the application to allow
30 the program-related web page to be displayed. If desired, before launching the web page viewing application, the program guide may display a list of web pages 581 related to the selected item to allow the

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user the opportunity to select a web page from the list. If the user selects chat option 584, the program guide may display interactive information display screen 592. Interactive information display screen 592
5 may include a partial or full screen display 594 for a chat session related to the selected program. The program guide may have launched a chat session application and provided the application with information on a program-related chat session to join
10 or initiate. The program guide may provide the user with an opportunity to schedule a reminder to join a chat session that is related to the selected item.

Illustrative steps involved in providing an interactive information display screen having a web
15 page option or a chat option such as interactive information display screen 580 of FIG. 17a are shown in FIG. 17b. After a user selects an item, the program guide may display an interactive information display screen at step 292. The step of displaying an
20 interactive information display screen, step 292, may involve the steps of displaying a web page option (step 600) and displaying a chat option (step 602). The step of displaying a web page option may involve the step of determining whether a web page option is available for
25 the user selection (e.g., determining whether a selected program has a related web page address). The step of displaying a chat option may involve the step of determining whether the chat option is available (e.g., determining whether a chat session application
30 exists at a set top box).

If the user selects the web page option, the program guide may provide the user with an opportunity to view a web page related to the selected item at step

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606. This may involve providing the user with an opportunity to select from a list of web pages that are related to the selected item. A website may be displayed by launching a web browser and directing the web browser to retrieve a web page related to the program. The address of the web page to be retrieved may be provided as part of the program listings data supplied to the user television equipment.

If the user selects the chat option, the program guide may provide the user with an opportunity to engage in a chat session (e.g., display, join, initiate, schedule a reminder for a chat session or take other actions related to a chat session) at step 608. Chat-related data may be provided to the program guide as part of the program listings data supplied to the user television equipment.

The web page and chat options are discussed together for convenience. These options may be displayed together, separately, or in combination. Web page and chat options may be available when a user selects a channel, a network, a program grouping, a program or a program listing to access an interactive information display screen. Chat-related systems are described in DeWeese et al. U.S. patent application Serial No. 09/356,270, filed concurrently herewith and Ellis et al. U.S. patent application Serial No. 09/346,134, filed concurrently herewith, which are hereby incorporated by reference herein in their entireties.

An interactive information display screen may include a status indicator. For example, as shown in FIG. 18a, interactive information display screen 344 may include a parental lock status indicator 350. The

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program guide may display interactive information display screen 338 when a user selects package #2 from package listings display screen 342. Interactive information display screen 338 may include a detailed description of Package #2 and four user-selectable options including parental lock option 340. When a user selects parental lock option 340, the user may be provided with an opportunity to enter a personal identification code (PIN). When a valid PIN is entered, the program guide may display interactive information display screen 344, which includes the same detailed description of package #2 and the same options that were displayed in interactive information display screen 338. In addition, interactive information display screen 344 may include status indicator 350 for the parental lock option. Status indicator 350 may indicate to the user that package #2 is now locked. Status indicator 350 may be a part of the information displayed within the detailed description portion of an interactive information display screen. Status information for other program guide features such as purchase, reminder, recording features may also be provided with a status indicator.

Illustrative steps involved in providing an interactive information display screen having a status indicator such as interactive information display screen 344 of FIG. 18a are shown in FIG. 18b. At step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive information display screen, step 292, may involve the step of displaying a status indicator (step 341). The program guide may determine the status for certain

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program guide features in connection with a selected program, network, channel, or package. For example, the program guide may determine whether a selected program has been purchased or locked. The status
5 indicator may be integrated into the detailed description portion of an interactive information display screen.

An interactive information display screen may include further options in an overlay. For example, as
10 shown in FIG. 19a, interactive information display screen 364 may include an overlay 366 for purchasing a channel. In operation, the program guide may display interactive information display screen 352 when a user selects channel #4 from channel listings display screen
15 356. Interactive information display screen 352 may include a detailed description of channel #4 and four user-selectable options including purchase channel #4 option 354. When the user selects purchase channel #4 option 354, the program guide may display interactive
20 information display screen 364 which includes the same detailed description of channel #4 and the same user-selectable options. In addition, interactive information display screen 364 may include overlay 366, which provides further options for purchasing channel
25 #4. For example, overlay 366 may present the user with an opportunity to view instructions for purchasing channel #4 via telephone. While overlay 366 is displayed, the user-selectable options (parental lock control, preference profile, purchase channel #4, other
30 user-selectable options) may be disabled. An overlay such as overlay 366 may also provide other options when other features (e.g., preference profile, parental lock, reminder, etc.) are selected.

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Illustrative steps involved in providing an interactive information display screen having an overlay such as interactive information display screen 364 of FIG. 19a are shown in FIG. 19b. After a user
5 selects an item, the program guide may display an interactive information display screen at step 292. The step of displaying an interactive information display screen, step 292, may include the step of displaying user-selectable options such as a purchase
10 option, a preference profile option, a record option, etc. At step 357, after the user has selected an option, the program guide may display an overlay providing further options for exercising the selected option. The overlay may be displayed when appropriate.
15 For example, when a user selects a tune-to-channel option, displaying an overlay would be inappropriate because there are typically no further options that are available for exercising the tune-to-channel option.

As mentioned above, an interactive
20 information display screen may allow the user to use scrolling to access user-selectable options that are available but not yet displayed because of display size limitations. For example, as shown in FIG. 20a, interactive information display screen 368 may include
25 an arrow 371 that indicates that the user may scroll (horizontally, for example) to more user-selectable options. A highlight region may initially be positioned on preference profile option 370. By pressing a remote control right arrow key (or other
30 suitable directional navigation key) five times, a user may access, display, and position the highlight region on view option 382, which was available, but had not yet been displayed. Scrolling to view option 382 may

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cause other options to be pushed off the display screen. Arrow 373 may indicate that options that were pushed off the screen are still accessible through scrolling. If desired, the user-selectable options may
5 be made into a continuous loop.

Illustrative steps involved in providing an interactive information display screen having scrollable user-selectable options such as interactive information display screen 368 of FIG. 20a are shown in
10 FIG. 20b. After a user selects an item, the program guide may display an interactive information display screen at step 292. The step of displaying an interactive information display screen, step 292, may include the step of displaying user-selectable options
15 such as a purchase option, a preference profile option, a record option, etc. The program guide may determine whether there is sufficient display space to display certain user-selectable options. At step 381, after the program guide determines that there is insufficient
20 space, the program guide may provide the user with the opportunity to navigate to options that are available but not yet displayed (e.g., by providing an arrow indicator and allowing the user to scroll to options that are not yet displayed).

25 An interactive information display screen may include a program listings option. For example, as shown in FIG. 21a, interactive information display screen 384 may include a program listings option 386 along with six other options (parental lock option 390, profile option 392, view option 384, add-to-favorites
30 option 396, package option 398, and purchase option 400). In operation, the program guide may display interactive information display screen 384 when a user

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selects channel 11 from channel listings display screen 388. Interactive information display screen 384 may include a detailed description of the selected channel, channel 11, and user-selectable options 384, 386, 390, 5 392, 394, 396, 398, and 400. When a user selects program listings option 386, display screen 402 may be displayed which includes a listing of programs on channel 11.

Illustrative steps involved in providing an
10 interactive information display screen having a program listings option such as interactive information display screen 368 of FIG. 21a are shown in FIG. 21b. At step 292, after a user has selected an item, the program guide may display an interactive information display
15 screen. The step of displaying the illustrative interactive information display screen, step 292, may include the step of displaying a program listings option (step 492). After a user selects a program listings option, the program guide may display program
20 listings for a selected item (step 512). The program listings option may be displayed when the program guide determines that the selected item is a channel, network, or program grouping.

An interactive information display screen may
25 include an exit option. For example, as shown in FIG. 22a, interactive information display screen 614 may include an exit option 616 and three other options (a related channel option, a parental option, and a profile option). Interactive information display
30 screen 614 may also include a detailed description for a selected item. Exit option 616 may be selected, for example, by positioning a highlight region on exit option 616 and pressing a remote control key (e.g., an

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OK key). In response, the program guide may return the user to watching television.

Illustrative steps involved in providing an interactive information display screen having an exit option such as interactive information display screen 614 of FIG. 22a are shown in FIG. 22b. At step 292, an interactive information display screen may be displayed. The step of displaying an interactive information display screen, step 292, may include the step of providing an exit option (step 622). When a user has selected an exit option, the program guide may return the user to watching television at step 624. The exit option need not be displayed to be accessible by the user. For example, a predetermined remote control key may be used to select the exit option.

An interactive information display screen may include a last option. For example, as shown in FIG. 22a, interactive information display screen 618 may include a last option 620 and four other options (a current program option, an upcoming program option, a related network option, and an exit option). Last option 620 may be selected, for example, by positioning a highlight region on last option 620 and pressing a remote control key (e.g., an OK key). After last option 620 is selected the program guide returns the user to the previous program guide display screen.

Illustrative steps involved in providing an interactive information display screen having a last option such as interactive information display screen 618 of FIG. 22a are shown in FIG. 22b. At step 292, an interactive information display screen may be displayed. The step of displaying an interactive information display screen, step 292, may include the

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step of providing a last option (step 626). The program guide may determine whether the last option is available before displaying the option (e.g., determine whether the last displayed screen was a program guide display screen). After a user has selected a last option, the program guide may return the user to the previous program guide display screen at step 628. If desired, the last option may always be available to return the user to the previous screen (e.g., return to watching television, return to the previous program guide display screen if any, etc.). The last option need not be displayed to be accessible by the user. For example, a predetermined remote control key may be used to select the last option.

As mentioned above, an interactive information display screen may allow the user to scrolling to access detailed description information that is available but not yet displayed because of display-size limitations. For example, as shown in FIG. 23a, interactive information display screen 630 may include an arrow 632 that indicates that the user may scroll (vertically, for example) to more information. By pressing a remote control arrow key (or other suitable directional navigation key), a user may access more information on a selected item. Scrolling to view more information may cause some of the displayed information to be pushed off the display screen. Arrow 634 may indicate that the information that was pushed off the screen is still accessible through scrolling. When information includes a status indicator (e.g., see FIG. 18a), the status indicator may scroll with the information or may be positioned at a fixed location on the display screen.

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Illustrative steps involved in providing an interactive information display screen having scrollable detailed description information such as interactive information display screen 630 of FIG. 23a are shown in FIG. 23b. After a user selects an item, the program guide may display an interactive information display screen at step 292. The step of displaying an interactive information display screen, step 292, may include the step of displaying a detailed description for the selected item. The program guide may determine whether sufficient display space is available to display certain detailed description information. At step 636, after the program guide determines that there is insufficient space, the program guide may provide the user with the opportunity to navigate to detailed description information that is available but not yet displayed (e.g., by providing an arrow indicator and allowing the user to scroll through the description).

An interactive information display screen may include a favorite channel option. For example, as shown in FIG. 24a, interactive information display screen 522 may include a favorite channel option 524 and six other options (a parental lock option 528, a view option 530, a profile option 532, a program listing option 534, a service package option 536, and a purchase option 538). In operation, the program guide may display interactive information display screen 522 when a user selects channel 4 from program listings display screen 526. Interactive information display screen 522 may include a detailed description of channel 4 and user-selectable options 524, 528, 530, 532, 534, 536, and 538. When a user selects favorite

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channel option 524, the program guide may add the selected channel to a list of favorite channels and may display interactive information display screen 540. Interactive information display screen 540 may include
5 the same detailed description of the selected channel and may include user-selectable options such as a reminder option, a profile option, a purchase option, etc. The detailed description may include status indicator 529, which indicates that channel 4 is a
10 favorite channel. The user-selectable options of interactive information display screen 540 may include a remove from favorites option 542.

Illustrative steps involved in providing an interactive information display screen having a
15 favorites option such as interactive information display screen 522 of FIG. 24a are shown in FIG. 24b. At step 292, after a user has selected an item, the program guide may display an interactive information display screen. The step of displaying an interactive
20 information display screen, step 292, may involve the step of displaying a favorites option (step 494). A favorites option may be available when the program guide determines that the selected item is a channel or a network that has been selected to access an
25 interactive information display screen. After a user has selected a favorite channel option from an interactive information display screen, the program guide may add (or remove) the channel from a list of favorite channels at step 514.

30 An interactive information display screen for a network listing may include a local channel option. For example, as shown in FIG. 25a, interactive information display screen 444 may include a local

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channel option 426 along with three other options (a parental lock option 450, a preference profile option 452, and a purchase option 454). In operation, the program guide may display interactive information display screen 444 when a user selects network F from program listings display screen 448. Interactive information display screen 444 may include a detailed description of network F and user-selectable options 446, 450, 452, and 454. Local channel option 446 may include a display region for identifying a local channel that is affiliated with selected network F. When a user selects local channel option 446, the program guide may display interactive information display screen 456. Interactive information display screen 456 may include a detailed description of channel X and user-selectable options.

Illustrative steps involved in providing an interactive information display screen having a local channel option such as interactive information display screen 444 of FIG. 25a are shown in FIG. 25b. After a user has selected an item, the program guide may display an interactive information display screen at step 292. The step of displaying an interactive information display screen, step 292, may involve the step of displaying a local channel option (step 498). A local channel option may be available when the program guide determines that the selected item is a network. After a user has selected a local channel option, the program guide may display an interactive information display screen for the local channel affiliated with the selected network at step 518.

An interactive information display screen may include a program grouping component option. A program

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grouping may be a package, a program series, a mini-series, a sports series, etc. For example, as shown in FIG. 26a, interactive information display screen 460 may include a package component option 462 and four
5 other options (a preference profile option 466, a parental lock option 468, and a purchase option 470). In operation, the program may display interactive information display screen 460 when a user selects a package for information. Interactive information
10 display screen 460 may include a detailed description of the selected package, package 2, and user-selectable options 462, 466, 468, 470, and 472. Package component option 462 may include a display region for providing text such as "Package Program A" as an identification
15 of a program, program A, which is a component of package 2. When a user selects package component option 462, the program guide may display interactive information display screen 474 which may include a detailed description of program A and user-selectable
20 options such as a reminder option, a record option, a profile option, a package option, etc.

As shown in FIG. 26b, interactive information display screen 463 may include a program grouping component option 465 along with four other options. In
25 operation, the program may display interactive information display screen 463 when a user selects a program grouping for more information. Interactive information display screen 463 may list the components of the selected program grouping, program grouping 3,
30 and user-selectable options. Program grouping component option 465 may include a display region for providing text such as "Information on Program Grouping Component A." When a user selects program grouping

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component option 465, the program guide may display interactive information display screen 467 for component A of program grouping 3. If desired, interactive information display screen 463 may include
5 a scrollable list of program grouping components, which may be selectable to access an interactive information display screen for a listed program grouping component, and may include user-selectable options such as purchase, parental, etc. for the selected program
10 grouping (e.g., see, FIG. 26d).

Illustrative steps involved in providing an interactive information display screen having a program grouping component option such as interactive information display screen 460 of FIG. 26a or
15 interactive information display screen 463 of FIG. 26b are shown in FIG. 26c. After a user has selected an item, the program guide may display an interactive information display screen at step 292. The step of displaying an interactive information display screen,
20 step 292, may involve the step of displaying a program grouping component option (step 500). A program grouping component option may be available when the program guide determines that the selected item is a program grouping (e.g., a mini-series, a sports series,
25 a package, etc.). At step 520, after a user has selected a program grouping component option, the program guide may display an interactive information display screen for a package component (e.g., a program which is part of the package). If desired, step 520
30 may involve displaying a list of components to provide the user with the opportunity to select a component from the list to access an interactive information display screen for the selected component.

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Illustrative steps involved in providing an interactive information display screen having a graphic image such as interactive information display screen 702 of FIG. 15a are shown in FIG. 27. At step 292, the
5 program guide may display an interactive information display screen. At step 638, the program guide may display one or more graphic images. A graphic image may be related to the selected item. The graphic image may be selectable to access information associated with
10 the image.

Illustrative steps involved in providing an interactive information display screen having a video display such as interactive information display screen 550 of FIG. 16a. are shown in FIG. 27. At step 292,
15 the program guide may display an interactive information display screen. At step 640, the program guide may display a video. The video may be a video clip, broadcast video, etc. A video clip may be related to a selected item (e.g., the video clip may be
20 a video preview for a program). A video clip may be selectable to access information associated with the video clip. A desired video clip may be provided using a server located at the television distribution facility. Systems in which video clips are provided
25 are described, for example, in U.S. Patent No. 5,523,796, which is hereby incorporated by reference herein in its entirety. Broadcast video may be related to a selected item (e.g., when the selected item is a currently airing program, a network, or a channel, a
30 reduced image video of the program, channel, or network may be displayed). Broadcast video may be unrelated to a selected item (e.g., display reduced image broadcast

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video from the channel the user was viewing before coming into the guide).

Illustrative steps involved in providing an interactive information display screen having an advertisement such as interactive information display screen 120 of FIG. 6a or interactive information display screen 138 of FIG. 7a are shown in FIG. 27. At step 292, the program guide may display an interactive information display screen that may include an advertisement. At step 642, the program guide may display an advertisement that may be related (or unrelated) to the selected item. For example, to display an unrelated advertisement, the program guide may display an advertisement from a predetermined advertisement rotation. A related advertisement may include an advertisement that simply has one attribute in common with the selected item. The advertisement may be selectable to access more information related to the advertisements. For example, an advertisement may be selected to display an option to purchase related merchandise. An option to purchase related merchandise may involve transmitting an order to an order fulfilment house (either directly from the user or via the television distribution facility). A system in which products may be ordered from a program guide is described in Knudson et al. U.S. patent application Serial No. 09/034,939, filed March 4, 1998, which is hereby incorporated by reference herein in its entirety. Program guide systems with product ordering are also described in Ellis et al. U.S. patent application Serial No. 08/428,809, filed April 24, 1995, which is hereby incorporated herein by reference in its entirety.

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An interactive information display screen may include Internet-related options such as an e-mail option. For example, as shown in FIG. 28a, interactive information display screen 644 may include e-mail
5 option 646 and two other user-selectable options. When a user selects e-mail option 646, the program guide may display interactive information display screen 648. Interactive information display screen 648 may include a display 650 for preparing and sending an e-mail to an
10 address related to the selected item. The address may be automatically inserted into the display 650. If desired, when the e-mail option has been selected, the program guide may display interactive information display screen 652, which may include a display 654 for
15 sending a recording of the selected item, an image, a video clip, merchandise, or program guide data to an e-mail address which is provided by the user. The program guide may also display interactive information display screen 656 which may include display 658.
20 Display 658 may include options for sending an e-mail having information related to the selected item such as text, a recording of the selected item, an authorization to view the selected item, an image related to the selected item, a video clip related to
25 the selected item, merchandise related to the selected item, program guide data for the selected item, etc.

Illustrative steps involved in providing an interactive information display screen having an e-mail option such as interactive information display screen
30 644 of FIG. 28a are shown in FIG. 28b. After a user has selected an item, the program guide may display an interactive information display screen. Displaying an interactive information display screen, step 292, may

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involve displaying an e-mail option (step 660).
Displaying an e-mail option may involve the step of
determining whether an e-mail option is available
(e.g., determining whether a selected program has a
5 related e-mail address). An e-mail option may be
available when the selected item is a program, a
program listing, a channel, a network, or a program
grouping. At step 662, after a user has selected an
e-mail option, the program guide may provide the user
10 with an opportunity to send an e-mail. Step 662 may
involve displaying options for sending an e-mail that
includes information which may be related to the
selected item such as text, a recording, viewing
authorization, an image, a video clip, merchandise,
15 program guide data, etc. Step 662 may involve the step
of launching an e-mail application for preparing and
sending an e-mail (e.g., displaying a draft e-mail
having an e-mail address related to the selected item).
E-mail related data may have been provided to the
20 program guide as part of the program listings data
supplied to the user television equipment. Program
guide features related to e-mail are described in
McKissick et al. U.S. patent application Serial No.
09/356,245 filed concurrently herewith, which is
25 incorporated herein by reference in its entirety, and
in above-mentioned 09/346,134. The e-mail option may
be used to provide feedback on a particular program.

An interactive information display screen may
include a data service option or an application option.
30 For example, as shown in FIG. 29a, interactive
information display screen 664 may include data service
option 666, application option 668 and other

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appropriate user-selectable options. When a user selecting data service option 666, the program guide may display interactive information display screen 670 that may include partial or full screen display 672 for
5 displaying data from a data service related to the selected item. When a user selects application option 668, the program guide may display interactive information display screen 674 that may include a partial or full screen display 676 for displaying an
10 application that is related to the selected item.

Illustrative steps involved in providing interactive information display screen having a data service option such as interactive information display screen 664 of FIG. 29a are shown in FIG. 29b. After a
15 user has selected an item for information, the program guide may display an interactive information display screen at step 292. Displaying an interactive information display screen may involve displaying a data service option (step 678). Displaying a data
20 service option may involve determining whether a data service that is related to the selected item is available. After a user has selected a data service option, the program guide may display data related to the selected item (e.g., a real-time stock ticker) at
25 step 692. Data service applications are described in Knudson et al. U.S. patent application Serial No. 09/229,047, filed January 12, 1999, which is hereby incorporated by reference herein in its entirety.

Illustrative steps involved in providing an
30 interactive information display screen having an application option such as interactive information display screen 664 of FIG. 29a are shown in FIG. 29b. At step 292, displaying an interactive information

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display screen may involve the step of displaying an application option (step 680). Displaying an application option may involve determining whether an application that is related to the selected item is
5 available. After a user has selected an application option, the program guide may launch an application that is related to the selected item and may display the running application (e.g., display a video game) at step 682. The data service option and the application
10 option are discussed together for conciseness. These options may be displayed in an interactive information display screen together or separately. Program guide systems with non-program guide application capabilities are described in above mentioned 09/346,134.

15 An interactive information display screen may include a video option. For example, as shown in FIG. 30a, interactive information display screen 802 may include a video option 804, other user-selectable options, and a detailed description of a selected item.
20 Interactive information display screen 802 may be displayed when a user selects program 4 for more information from program guide display screen 800. When a user selects video option 804, the program guide may display a video in partial or full screen display
25 806 in interactive information display 802. The video may be a video related to the selected item (program 5) or may be a portion of the selected item. If desired, when video option 804 is selected, the program guide may download a video clip which is related to the
30 selected item (program 5). The download may occur in background processing.

Illustrative steps involved in providing an interactive information display screen having a video

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option such as interactive information display screen 802 of FIG. 309 are shown in FIG. 30b. After a user has selected an item for information, the program guide may display an interactive information display screen

5 at step 292. Displaying an interactive information display screen may involve displaying a video option (step 808). Displaying a video option may involve step 808a for determining whether a video option is available. A video option may be available when the

10 selected item is a program (or program listing), channel, network, or program grouping. After a user has selected a video option, the program guide may provide a video clip (e.g., display a video clip related to the item, display a portion of the selected

15 item, download a video clip related to the selected item, etc.) at step 810.

Options such as the options discussed above may be displayed in any appropriate combination in an interactive information display screen for a selected

20 item. For brevity, the appropriateness for the display of each option is discussed with the option.

A remote control may shortcut keys. For example, a remote control may have a record key, a lock key, a favorite key, etc. If desired, pressing one of

25 these shortcut keys while tuned to a program, or while highlighting a program listing, a channel, a network, or a program grouping may cause an information display screen related to the program, program listing, channel, network, or program grouping to be displayed,

30 and may further cause an option related to the shortcut key to be automatically selected (e.g., automatically selects a record option, a lock option, a favorite option, etc.). If desired, when an interactive

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information display screen is displayed, pressing a shortcut key may cause an available option to be selected (e.g., a record option, a parental option, a favorite option, etc. is selected) without requiring
5 further actions by the user to select the option (e.g., without the user having to highlight the available option and press a data entry key for the option to select the option).

Although the principles of the invention have
10 been described primarily in the context of program guides and programming related items, the invention is not so limited. If desired, the items may be non-programming-related items and the interactive application that displays these items may be a non-
15 program-guide application. For example, the interactive application may be a home shopping application and the items may be product listings, when the user selects a desired item, additional information is displayed on that item in an interactive home
20 shopping information display screen. This screen includes selectable options related to various home shopping features such as web-related features, home shopping chat features, or the like.

The foregoing is merely illustrative of the
25 principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

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What is claimed is:

1. A method for using an interactive television program guide having a number of program guide features, wherein a user may view a number of programming-related items, and wherein there is information on each programming-related item that is associated with that programming-related item, comprising:

displaying at least one of the programming-related items for the user;

allowing the user to select that programming-related item to access the associated information;

determining which of the program guide features are to be available to be exercised in connection with the selected programming-related item; and

displaying an interactive information display screen that includes selectable program guide options for exercising the available program guide features in connection with the selected programming-related item and that includes the associated information for that selected item.

2. The method defined in claim 1 wherein the programming-related item is a television program, the method further comprising:

displaying the television program for the user; and

allowing the user to select the television program to access the information associated with the television program.

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3. The method defined in claim 1 wherein the programming-related item is a program listing, the method further comprising:

displaying the program listing for the user; and

allowing the user to select the program listing to access the information associated with the program listing.

4. The method defined in claim 1 wherein the programming-related item is a program listing, the method further comprising:

simultaneously displaying a plurality of the program listings for the user; and

allowing the user to select one of the program listings to access the information associated with that program listing.

5. The method defined in claim 1 wherein determining includes determining the number of available program guide features based on the information associated with the selected programming-related item.

6. The method defined in claim 1 wherein displaying an interactive information display screen includes determining names for the options based on the information associated with the selected programming-related item.

7. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying plural suboptions which are related to the selected program guide option.

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8. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an overlay in the interactive information display screen that includes plural suboptions for exercising a selected program guide option.

9. The method defined in claim 1 wherein displaying an interactive information display screen includes scrolling through the options when at least one of the options is available but not yet displayed due to display-size limitations.

10. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an advertisement in the interactive information display screen.

11. The method defined in claim 10 wherein displaying an advertisement includes providing the user with the opportunity to select the advertisement.

12. The method defined in claim 1 wherein displaying an interactive information display screen includes scrolling to associated information for the selected programming-related item which is available but not yet displayed.

13. The method defined in claim 1 wherein the displaying an interactive information display screen includes displaying in the interactive information display screen a video clip that is related to the selected programming-related item.

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14. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an image which is related to the selected programming-related item.

15. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a status for the selected programming-related item.

16. The method defined in claim 15 wherein the status indicates whether a reminder has been set for the selected programming-related item.

17. The method defined in claim 15 wherein the status indicates whether a recording has been scheduled for the selected programming-related item.

18. The method defined in claim 15 wherein the status indicates whether the selected programming-related item has been purchased.

19. The method defined in claim 15 wherein the status indicates whether the selected programming-related item is on a list of favorites.

20. The method defined in claim 15 wherein the status indicates whether the selected programming-related item is parental locked.

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21. The method defined in claim 1 wherein allowing includes allowing the user to select a listing.

22. The method defined in claim 1 wherein allowing includes allowing the user to select a program that is being displayed.

23. The method defined in claim 1 wherein allowing includes allowing the user to select an information option from another interactive information display screen.

24. The method defined in claim 1 wherein the selected programming-related item is a television program.

25. The method defined in claim 1 wherein the selected programming-related item is a channel.

26. The method defined in claim 1 wherein the selected programming-related item is a network.

27. The method defined in claim 1 wherein the selected programming-related item is a package.

28. The method defined in claim 1 wherein the selected programming-related item is a program grouping.

29. The method defined in claim 1 wherein displaying an interactive information display screen

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includes providing an exit option for returning to viewing television.

30. The method defined in claim 1 wherein displaying an interactive information display screen includes providing a last option to return to a previous program guide display screen which was accessed by the user.

31. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option which is related to a program guide reminder feature.

32. The method defined in claim 1 wherein the selected programming-related item is a program and wherein displaying an interactive information display screen includes displaying in the interactive information display screen a reminder option for setting a reminder for the program.

33. The method defined in claim 1 wherein the programming-related item is a program and wherein displaying an interactive information display screen includes providing a user-selectable reminder option for deleting a reminder for the program.

34. The method defined in claim 1 wherein the programming-related item is a program and wherein displaying an interactive information display screen includes providing a user-selectable reminder option for modifying a reminder for the program.

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35. The method defined in claim 1 wherein the programming-related item is a program grouping and wherein displaying an interactive information display screen includes providing a user-selectable reminder option for setting a series reminder for the program grouping.

36. The method defined in claim 1 wherein the programming-related item is a program grouping and wherein displaying an interactive information display screen includes providing a user-selectable reminder option for modifying a series reminder for the program grouping.

37. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option which is related to a program guide parental control feature.

38. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a parental control option.

39. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying in the interactive information display screen a parental control option;
and

requiring code entry when the parental control option is selected.

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40. The system of claim 39 wherein displaying in the interactive information display screen a parental control option includes selecting parental controls based on attributes of the selected programming-related item.

41. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option to allow the user to select parental controls for the selected programming-related item.

42. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option to allow the user to remove parental controls for the selected programming-related item.

43. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option to allow the user to change parental controls for the selected programming-related item.

44. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option to allow the user to set parental controls for the selected programming-related

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item when the selected programming-related item is from group consisting of a program and a channel.

45. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen an option related to purchasing the selected programming-related item.

46. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item on impulse.

47. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item by telephone.

48. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item on demand.

49. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information

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display screen a purchase option when the selected programming-related item is a program.

50. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option when the selected programming-related item is a channel.

51. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option when the selected programming-related item is a package.

52. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying in the interactive information display screen a purchase option; and
allowing the user to enter a purchase code which is required to complete a purchase.

53. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying in the interactive information display screen a purchase option to allow the user to cancel a purchase request for the selected programming-related item.

54. The method defined in claim 1 wherein displaying an interactive information display screen

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includes displaying in the interactive information display screen an add-to-favorites option.

55. The method defined in claim 1 wherein displaying an interactive information display screen includes for displaying an option in the interactive information display screen that allows the programming-related item that is a channel to be set as a favorite channel.

56. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that allows the programming-related item which is a channel to be removed as a favorite channel.

57. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to user preference profiles.

58. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a preference profile option in the interactive information display screen that provides an opportunity to control preference profile settings based on attributes of the selected programming-related item.

59. The method defined in claim 1 wherein displaying an interactive information display screen

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includes displaying a preference profile option in the interactive information display screen that provides an opportunity to set preference profile settings.

60. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a preference profile option in the interactive information display screen that provides an opportunity to remove preference profile settings.

61. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a preference profile option in the interactive information display screen that provides an opportunity to change preference profile settings.

62. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to user preference profiles when the programming-related item is a program.

63. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to user preference profiles when the programming-related item is a channel.

64. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive

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information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program.

65. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to a specific other showing of the selected programming-related item when the selected programming-related item is a program.

66. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying an option in the interactive information display screen that is related to a specific other showing of the selected programming-related item when the selected programming-related item is a program; and

displaying an interactive information display screen for the specific other showing.

67. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying an option in the interactive information display screen that is related to a specific other showing of the selected programming-related item when the selected programming-related item is a program; and

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displaying an information display screen containing a list of other showings as individual options.

68. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program;

displaying an information display screen containing a list of the other showings as individual options; and

allowing the user to navigate to other showings which are available but not yet displayed.

69. The method defined in claim 1 wherein displaying an interactive information display screen includes:

displaying an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program; and

displaying an information display screen having a list of the other showings as individual options and having information on a highlighted one of the other showings.

70. The method defined in claim 1 wherein displaying an interactive information display screen includes:

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displaying an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program;

displaying an information display screen having a list of the other showings as individual options; and

displaying an interactive information display screen for the selected one of the other showings.

71. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to all other program showings having the same title as the selected programming-related item when the selected programming-related item is a program.

72. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to all other showings for the same selected programming-related item when the selected programming-related item is a program.

73. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen that is related to all other program showings that are part of the selected

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programming-related item when the selected programming-related item is a program grouping.

74. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen which is related to recording the selected programming-related item.

75. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a record option in the interactive information display screen which when selected directs a videocassette recorder to record the selected programming-related item.

76. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a record option in the interactive information display screen which when selected directs a video recording device at a television distribution facility to record the selected programming-related item.

77. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a record option in the interactive information display screen which when selected directs a local digital storage device to record the selected programming-related item.

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78. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a record option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a program.

79. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a record option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a program grouping.

80. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen for scheduling to record the selected programming-related item.

81. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen for deleting a scheduled recorded of the selected programming-related item.

82. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen for modifying a scheduled recording of the selected programming-related item.

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83. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a currently airing program

84. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen which is related to a program grouping of the selected programming-related item.

85. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen when the selected programming-related item is part of a program series.

86. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen when the selected programming-related item is part of a mini-series.

87. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen when the

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selected programming-related item is part of a sports series.

88. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen when the selected programming-related item is part of a package.

89. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program grouping which is related to the selected programming-related item when the selected programming-related item is a program.

90. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program grouping which is related to the selected programming-related item when the selected programming-related item is a channel.

91. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program

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grouping containing the selected programming-related item.

92. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for displaying a list of program groupings which contain the selected programming-related item.

93. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for accessing an interactive information display screen for a package containing the selected programming-related item.

94. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping option in the interactive information display screen for displaying a list of packages which contain the selected programming-related item.

95. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for accessing information on a component of the selected programming-related item when the selected programming-related item is a program grouping.

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96. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a package.

97. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a channel component of the selected programming-related item when the selected programming-related item is a package.

98. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a program series.

99. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-

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related item when the selected programming-related item is a mini-series.

100. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a sports series.

101. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen.

102. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending e-mail to an address which is related to the selected programming-related item.

103. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending a recorded copy of at least part of the selected programming-related item.

104. The method defined in claim 1 wherein displaying an interactive information display screen

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includes displaying an e-mail option in the interactive information display screen for sending an authorization to view the selected programming-related item.

105. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending an image from the selected programming-related item.

106. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending a video clip which is related to the selected programming-related item.

107. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending a merchandise related to the selected programming-related item.

108. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an e-mail option in the interactive information display screen for sending program guide information related to the selected programming-related item.

109. The method defined in claim 1 wherein displaying an interactive information display screen

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includes displaying a feedback option in the interactive information display screen.

110. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a data service option in the interactive information display screen for accessing a data service which is related to the selected programming-related item.

111. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an option in the interactive information display screen for selecting to run an application which is related to the selected programming-related item.

112. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a chat option in the interactive information display screen.

113. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a chat option in the interactive information display screen for joining a chat session related to the selected programming-related item.

114. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a chat option in the interactive information display screen for initiating a chat

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session related to the selected programming-related item.

115. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a chat option in the interactive information display screen for scheduling a reminder for a chat session related to the selected programming-related item.

116. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an Internet option in the interactive information display screen for accessing a web page related to the selected programming-related item.

117. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an Internet option in the interactive information display screen for displaying a list of web pages which are related to the selected programming-related item.

118. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a video option in the interactive information display screen for displaying a video clip.

119. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a video option in the interactive information display screen for displaying a video clip

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which is related to the selected programming-related item.

120. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a video option in the interactive information display screen for downloading to local storage a video clip which is related to the selected programming-related item.

121. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a video option in the interactive information display screen for displaying a portion of the selected programming-related item.

122. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a related channel option in the interactive information display screen for displaying an interactive information display screen for a channel which is showing the selected programming-related item when the selected programming-related item is a program.

123. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a related network option in the interactive information display screen for displaying an interactive information display screen for a network which is showing the selected programming-related item when the selected programming-related item is a program.

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124. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a current program option in the interactive information display screen for displaying an interactive information display screen for a current program which is being shown on the selected programming-related item when the selected programming-related item is a channel.

125. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a current program option in the interactive information display screen for displaying an interactive information display screen for a current program which is being shown on the selected programming-related item when the selected programming-related item is a network.

126. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an upcoming program option in the interactive information display screen for displaying an interactive information display screen for a program which is to be shown on the selected programming-related item when the selected programming-related item is a channel.

127. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying an upcoming program option in the interactive information display screen for displaying an interactive information display screen for a program which is to be shown on the selected programming-

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related item when the selected programming-related item is a network.

128. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a local channel option in the interactive information display screen for displaying an interactive information display screen for a channel which is a local affiliate of the selected programming-related item when the selected programming-related item is a network.

129. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program listings option in the interactive information display screen for displaying a list of programs scheduled to be shown on the selected programming-related item when the selected programming-related item is a channel.

130. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a program listings option in the interactive information display screen for displaying a list of programs scheduled to be shown on the selected programming-related item when the selected programming-related item is a network.

131. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a tune-to-channel option in the interactive information display screen when the selected programming-related item is a channel.

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132. The method defined in claim 131 wherein displaying a tune-to-channel option includes renaming the tune-to-channel option when the selected programming-related item is a music channel.

133. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a view option in the interactive information display screen for viewing the selected programming-related item when the selected programming-related item is a program.

134. The method defined in claim 1 wherein displaying an interactive information display screen includes displaying a tune-to-channel option in the interactive information display screen for tuning to a channel which will show the selected programming-related item when the selected programming-related item is an upcoming program.

135. A method for providing interactive information display screens in a television system, comprising:

providing a user with an opportunity to select one of multiple programming-related items to access associated information on the item; and

displaying an interactive information display screen that includes the information associated with a selected item and that includes user-selectable hyperlinks to other information display screens having information about programming-related items that are different from but related to the selected item.

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136. The method defined in claim 135 further comprising:

- providing various features;
- determining which features are available to be exercised in connection with the selected programming-related item; and
- providing the determined features for the selected programming-related item in the information display screen.

137. The method defined in claim 135 further comprising providing a reminder option which is selectable from the interactive information display screen for exercising a program guide reminder feature in connection with the selected programming-related item.

138. The method defined in claim 135 further comprising providing a view option which is selectable from the interactive information display screen for exercise in connection with the selected programming-related item.

139. The method defined in claim 135 further comprising providing a listen option which is selectable from the interactive information display screen for exercising a listen feature in connection with the selected programming-related item.

140. The method defined in claim 135 further comprising providing a tune-to-channel option which is selectable from the interactive information display

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screen for exercising a tune-to-channel feature in connection with the selected programming-related item.

141. The method defined in claim 135 further comprising providing a parental control option which is selectable from the interactive information display screen for exercising a parental control feature in connection with the selected programming-related item.

142. The method defined in claim 135 further comprising providing a purchase option which is selectable from the interactive information display screen for exercising a purchase feature in connection with the selected programming-related item.

143. The method defined in claim 135 further comprising providing an other channel/time option which is selectable from the interactive information display screen for exercising a program guide other channel/time feature in connection with the selected programming-related item.

144. The method defined in claim 135 further comprising providing an a preference profile option which is selectable from the interactive information display screen for exercising a preference profile feature in connection with the selected programming-related item.

145. The method defined in claim 135 further comprising providing a record option which is selectable from the interactive information display

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screen for exercising a record feature in connection with the selected programming-related item.

146. The method defined in claim 135 further comprising providing a package hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a package which includes the selected programming-related item.

147. The method defined in claim 135 further comprising providing a network hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a network which is related to the selected programming-related item.

148. The method defined in claim 135 further comprising providing a channel hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a channel which is related to the selected programming-related item.

149. The method defined in claim 135 further comprising:

determining whether the selected programming-related item is a channel; and

providing a current program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a current program on the channel.

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150. The method defined in claim 135 further comprising:

determining whether the selected programming-related item is a channel; and

providing an upcoming program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for an upcoming program on the channel.

151. The method defined in claim 135 further comprising providing a web page option which is selectable from the interactive information display screen for displaying a web page which is related to the selected programming-related item.

152. The method defined in claim 135 further comprising providing a chat session option which is selectable from the interactive information display screen for displaying a chat session which is related to the selected programming-related item.

153. The method defined in claim 135 further comprising providing an e-mail option which is selectable from the interactive information display screen for drafting an e-mail message to an address related to the selected programming-related item.

154. The method defined in claim 135 further comprising displaying a status indicator within the interactive information display screen for providing status information on the selected programming-related item.

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155. The method defined in claim 135 further comprising:

providing options for the selected programming-related item; and

displaying the option within the interactive information display screen.

156. The method defined in claim 135 further comprising:

providing options for the selected programming-related item;

displaying some of the options; and

scrolling to display the other options.

157. The method defined in claim 135 further comprising providing a program listings option which is selectable from the interactive information display screen for exercising a program guide program listing feature in connection with the selected programming-related item.

158. The method defined in claim 135 further comprising providing an exit option which is selectable from the interactive information display screen for exiting the interactive information display screen.

159. The method defined in claim 135 further comprising providing a last option which is selectable from the interactive information display screen for returning to a previous screen which was accessed by the user.

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160. The method defined in claim 135 further comprising scrolling the information about the selected programming-related item.

161. The method defined in claim 135 further comprising providing an add-to-favorites option which is selectable from the interactive information display screen for exercising a favorites feature in connection with the selected programming-related item.

162. The method defined in claim 135 further comprising providing a program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a program which is related to the selected programming-related item.

163. The method defined in claim 135 wherein the information display screen includes a graphic image.

164. The method defined in claim 135 wherein the information display screen includes a graphic image which is related to the selected programming-related item.

165. The method defined in claim 135 wherein the information display screen includes a graphic image which is selectable to access an information display screen for the graphic image.

166. The method defined in claim 135 wherein the information display screen includes video.

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167. The method defined in claim 135 wherein the information display screen includes broadcast video related to the selected programming-related item.

168. The method defined in claim 135 wherein the information display screen includes broadcast video related to video that a user was previously viewing.

169. The method defined in claim 135 wherein the information display screen includes a video clip.

170. The method defined in claim 135 wherein the information display screen includes a video clip which is related to the selected programming-related item.

171. The method defined in claim 135 wherein the information display screen includes a video clip to provide a preview for the selected programming-related item.

172. The method defined in claim 135 wherein the information display screen includes a video clip which is selectable to access an interactive information display screen for the video clip.

173. The method defined in claim 135 wherein the information display screen includes an advertisement.

174. The method defined in claim 135 wherein the information display screen includes an

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advertisement which is related to the selected programming-related item.

175. The method defined in claim 135 wherein the information display screen includes an advertisement which is selectable to access an interactive information display screen for the advertisement.

176. A method for using an interactive television program guide system, comprising:
 displaying an information display screen containing a description of a television channel; and
 displaying a tune to channel option in the information display screen for viewing a program airing on the channel.

177. A method for using an interactive television program guide system, comprising:
 displaying an information display screen having a description of a television channel; and
 displaying a parental control option in the information display screen.

178. A method for using an interactive television program guide system, comprising:
 displaying an information display screen having a description of a television channel; and
 displaying a purchase option in the information display screen.

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179. A method for using an interactive television program guide system, comprising:
displaying an information display screen having a description of a television network; and
displaying a program listings option in the information display screen for providing a program listing for the network.

180. A method for using an interactive television program guide system, comprising:
displaying an information display screen having a description of a television channel; and
displaying a favorites option in the information display screen for adding the channel to a list of favorites.

181. A method for using an interactive television program guide system, comprising:
displaying an information display screen having a description of a television network; and
displaying a program grouping option in the information display screen for providing detailed information on a package that includes the network as a component.

182. A method for using an interactive television program guide system, comprising:
displaying an information display screen having a description of a television network; and
displaying a local channel option in the information display screen for providing detailed information on a local network affiliate of the network.

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183. A method for using an interactive television program guide system, comprising:

displaying an information display screen on the user television equipment having a description of a television program grouping; and

displaying a program grouping component option in the information display screen for providing detailed information on a component of the program grouping.

184. An interactive television program guide system having a number of program guide features, wherein a user may view a number of programming-related items, and wherein there is information on each programming-related item that is associated with that programming-related item, comprising:

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television equipment is configured to display at least one of the programming-related items for the user, is configured to allow the user to select that programming-related item to access the associated information, is configured to determine which of the program guide features are to be available to be exercised in connection with the selected programming-related item, and is further configured to display an interactive information display screen that includes selectable program guide options for exercising the available program guide features in connection with the selected programming-related item and that includes the associated information for that selected item.

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185. The system defined in claim 184 wherein the programming-related item is a television program, the user television equipment is further configured to display the television program for the user and to allow the user to select the television program to access the information associated with the television program.

186. The system defined in claim 184 wherein the programming-related item is a program listing, the user television equipment is further configured to display the program listing for the user, and to allow the user to select the program listing to access the information associated with the program listing.

187. The system defined in claim 184 wherein the programming-related item is a program listing, the user television equipment is further configured to simultaneously display a plurality of the program listings for the user, and to allow the user to select one of the program listings to access the information associated with that program listing.

188. The system defined in claim 184 wherein the user television equipment is configured to determine the number of available program guide features based on the information associated with the selected programming-related item.

189. The system defined in claim 184 wherein the user television equipment is configured to determine names for the options based on the

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information associated with the selected programming-related item.

190. The system defined in claim 184 wherein the user television equipment is configured to display plural suboptions which are related to the selected program guide option.

191. The system defined in claim 184 wherein the user television equipment is configured to display an overlay in the interactive information display screen that includes plural suboptions for exercising a selected program guide option.

192. The system defined in claim 184 wherein the user television equipment is configured to scroll through the options when at least one of the options is available but not yet displayed due to display-size limitations.

193. The system defined in claim 184 wherein the user television equipment is configured to display an advertisement in the interactive information display screen.

194. The system defined in claim 193 wherein the user television equipment is configured to provide the user with the opportunity to select the advertisement.

195. The system defined in claim 184 wherein the user television equipment is configured to scroll to associated information for the selected programming-

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related item which is available but not yet displayed.

196. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a video clip that is related to the selected programming-related item.

197. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an image which is related to the selected programming-related item.

198. The system defined in claim 184 wherein the user television equipment is configured to display a status for the selected programming-related item.

199. The system defined in claim 198 wherein the status indicates whether a reminder has been set for the selected programming-related item.

200. The system defined in claim 198 wherein the status indicates whether a recording has been scheduled for the selected programming-related item.

201. The system defined in claim 198 wherein the status indicates whether the selected programming-related item has been purchased.

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202. The system defined in claim 198 wherein the status indicates whether the selected programming-related item is on a list of favorites.

203. The system defined in claim 198 wherein the status indicates whether the selected programming-related item is parental locked.

204. The system defined in claim 184 wherein the user television equipment is configured allow the user to select a listing.

205. The system defined in claim 184 wherein the user television equipment is configured to allow the user to select a program that is being displayed.

206. The system defined in claim 184 wherein the user television equipment is configured to allow the user to select an information option from another interactive information display screen.

207. The system defined in claim 184 wherein the selected programming-related item is a television program.

208. The system defined in claim 184 wherein the selected programming-related item is a channel.

209. The system defined in claim 184 wherein the selected programming-related item is a network.

210. The system defined in claim 184 wherein the selected programming-related item is a package.

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211. The system defined in claim 184 wherein the selected programming-related item is a program grouping.

212. The system defined in claim 184 wherein the user television equipment is configured to provide an exit option for returning to viewing television.

213. The system defined in claim 184 wherein the user television equipment is configured to provide a last option for returning to a previous program guide display screen which was accessed by the user.

214. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option which is related to a program guide reminder feature.

215. The system defined in claim 184 wherein the selected programming-related item is a program and the user television equipment is configured to display in the interactive information display screen a reminder option for setting a reminder for the program.

216. The system defined in claim 184 wherein the programming-related item is a program and wherein the user television equipment is configured to provide a user-selectable reminder option for deleting a reminder for the program.

217. The system defined in claim 184 wherein the programming-related item is a program and wherein the user television equipment is configured to provide

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a user-selectable reminder option for modifying a reminder for the program.

218. The system defined in claim 184 wherein the programming-related item is a program grouping and wherein the user television equipment is configured to provide a user-selectable reminder option for setting a series reminder for the program grouping.

219. The system defined in claim 184 wherein the programming-related item is a program grouping and wherein the user television equipment is configured to provide a user-selectable reminder option for modifying a series reminder for the program grouping.

220. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option which is related to a program guide parental control feature.

221. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a parental control option.

222. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a parental control option and configured to require code entry when the parental control option is selected.

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223. The system of claim 222 wherein the user television equipment is configured to display in the interactive information display screen a parental control option includes selecting parental controls based on attributes of the selected programming-related item.

224. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option to allow the user to select parental controls for the selected programming-related item.

225. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option to allow the user to remove parental controls for the selected programming-related item.

226. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option to allow the user to change parental controls for the selected programming-related item.

227. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option to allow the user to set parental controls for the selected programming-related item when the selected programming-related item is from a group consisting of a program and a channel.

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228. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an option related to purchasing the selected programming-related item.

229. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item on impulse.

230. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item by telephone.

231. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option to allow the user to purchase the selected programming-related item on demand.

232. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option when the selected programming-related item is a program.

233. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a

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purchase option when the selected programming-related item is a channel.

234. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option when the selected programming-related item is a package.

235. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option and is configured to allow the user to enter a purchase code which is required to complete a purchase.

236. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen a purchase option to allow the user to cancel a purchase request for the selected programming-related item.

237. The system defined in claim 184 wherein the user television equipment is configured to display in the interactive information display screen an add-to-favorites option.

238. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that allows the programming-related item that is a channel to be set as a favorite channel.

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239. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that allows the programming-related item which is a channel to be removed as a favorite channel.

240. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to user preference profiles.

241. The system defined in claim 184 wherein the user television equipment is configured to display a preference profile option in the interactive information display screen that provides an opportunity to control preference profile settings based on attributes of the selected programming-related item.

242. The system defined in claim 184 wherein the user television equipment is configured to display a preference profile option in the interactive information display screen that provides an opportunity to set preference profile settings.

243. The system defined in claim 184 wherein the user television equipment is configured to display a preference profile option in the interactive information display screen that provides an opportunity to remove preference profile settings.

244. The system defined in claim 184 wherein the user television equipment is configured to display a preference profile option in the interactive

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information display screen that provides an opportunity to change preference profile settings.

245. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to user preference profiles when the programming-related item is a program.

246. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to user preference profiles when the programming-related item is a channel.

247. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program.

248. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to a specific other showing of the selected programming-related item when the selected programming-related item is a program.

249. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to a specific other showing of the

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selected programming-related item when the selected programming-related item is a program and is configured to display an interactive information display screen for the specific other showing.

250. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to a specific other showing of the selected programming-related item when the selected programming-related item is a program and is configured to display an information display screen containing a list of other showings as individual options.

251. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program, is configured to display an information display screen containing a list of the other showings as individual options, and is configured to allow the user to navigate to other showings which are available but not yet displayed.

252. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program and is configured to display an information display screen having a list of the

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other showings as individual options and having information on a highlighted one of the other showings.

253. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to other showings of the selected programming-related item when the selected programming-related item is a program, is configured to display an information display screen having a list of the other showings as individual options, and is configured to display an interactive information display screen for the selected one of the other showings.

254. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to all other program showings having the same title as the selected programming-related item when the selected programming-related item is a program.

255. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to all other showings for the same selected programming-related item when the selected programming-related item is a program.

256. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen that is related to all other program showings that are

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part of the selected programming-related item when the selected programming-related item is a program grouping.

257. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen which is related to recording the selected programming-related item.

258. The system defined in claim 184 wherein the user television equipment is configured to display a record option in the interactive information display screen which when selected directs a videocassette recorder to record the selected programming-related item.

259. The system defined in claim 184 wherein the user television equipment is configured to display a record option in the interactive information display screen which when selected directs a video recording device at a television distribution facility to record the selected programming-related item.

260. The system defined in claim 184 wherein the user television equipment is configured to display a record option in the interactive information display screen which when selected directs a local digital storage device to record the selected programming-related item.

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261. The system defined in claim 184 wherein the user television equipment is configured to display a record option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a program.

262. The system defined in claim 184 wherein the user television equipment is configured to display a record option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a program grouping.

263. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen for scheduling to record the selected programming-related item.

264. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen for deleting a scheduled recording of the selected programming-related item.

265. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen for modifying a scheduled recording of the selected programming-related item.

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266. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen for recording the selected programming-related item when the selected programming-related item is a currently airing program

267. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen which is related to a program grouping of the selected programming-related item.

268. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen when the selected programming-related item is part of a program series.

269. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen when the selected programming-related item is part of a mini-series.

270. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen when the selected programming-related item is part of a sports series.

271. The system defined in claim 184 wherein the user television equipment is configured to display

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a program grouping option in the interactive information display screen when the selected programming-related item is part of a package.

272. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program grouping which is related to the selected programming-related item when the selected programming-related item is a program.

273. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program grouping which is related to the selected programming-related item when the selected programming-related item is a channel.

274. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for accessing an interactive information display screen for a program grouping containing the selected programming-related item.

275. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for displaying a list of

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program groupings which contain the selected programming-related item.

276. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for accessing an interactive information display screen for a package containing the selected programming-related item.

277. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping option in the interactive information display screen for displaying a list of packages which contain the selected programming-related item.

278. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for accessing information on a component of the selected programming-related item when the selected programming-related item is a program grouping.

279. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a package.

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280. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a channel component of the selected programming-related item when the selected programming-related item is a package.

281. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a program series.

282. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a mini-series.

283. The system defined in claim 184 wherein the user television equipment is configured to display a program grouping component option in the interactive information display screen for displaying an interactive information display screen for a program component of the selected programming-related item when the selected programming-related item is a sports series.

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284. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen.

285. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending e-mail to an address which is related to the selected programming-related item.

286. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending a recorded copy of at least part of the selected programming-related item.

287. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending an authorization to view the selected programming-related item.

288. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending an image from the selected programming-related item.

289. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display

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screen for sending a video clip which is related to the selected programming-related item.

290. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending a merchandise related to the selected programming-related item.

291. The system defined in claim 184 wherein the user television equipment is configured to display an e-mail option in the interactive information display screen for sending program guide information related to the selected programming-related item.

292. The system defined in claim 184 wherein the user television equipment is configured to display a feedback option in the interactive information display screen.

293. The system defined in claim 184 wherein the user television equipment is configured to display a data service option in the interactive information display screen for accessing a data service which is related to the selected programming-related item.

294. The system defined in claim 184 wherein the user television equipment is configured to display an option in the interactive information display screen for selecting to run an application which is related to the selected programming-related item.

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295. The system defined in claim 184 wherein the user television equipment is configured to display a chat option in the interactive information display screen.

296. The system defined in claim 184 wherein the user television equipment is configured to display a chat option in the interactive information display screen for joining a chat session related to the selected programming-related item.

297. The system defined in claim 184 wherein the user television equipment is configured to display a chat option in the interactive information display screen for initiating a chat session related to the selected programming-related item.

298. The system defined in claim 184 wherein the user television equipment is configured to display a chat option in the interactive information display screen for scheduling a reminder for a chat session related to the selected programming-related item.

299. The system defined in claim 184 wherein the user television equipment is configured to display an Internet option in the interactive information display screen for accessing a web page related to the selected programming-related item.

300. The system defined in claim 184 wherein the user television equipment is configured to display an Internet option in the interactive information

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display screen for displaying a list of web pages which are related to the selected programming-related item.

301. The system defined in claim 184 wherein the user television equipment is configured to display a video option in the interactive information display screen for displaying a video clip.

302. The system defined in claim 184 wherein the user television equipment is configured to display a video option in the interactive information display screen for displaying a video clip which is related to the selected programming-related item.

303. The system defined in claim 184 wherein the user television equipment is configured to display a video option in the interactive information display screen for downloading to local storage a video clip which is related to the selected programming-related item.

304. The system defined in claim 184 wherein the user television equipment is configured to display a video option in the interactive information display screen for displaying a portion of the selected programming-related item.

305. The system defined in claim 184 wherein the user television equipment is configured to display a related channel option in the interactive information display screen for displaying an interactive information display screen for a channel which is

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showing the selected programming-related item when the selected programming-related item is a program.

306. The system defined in claim 184 wherein the user television equipment is configured to display a related network option in the interactive information display screen for displaying an interactive information display screen for a network which is showing the selected programming-related item when the selected programming-related item is a program.

307. The system defined in claim 184 wherein the user television equipment is configured to display a current program option in the interactive information display screen for displaying an interactive information display screen for a current program which is being shown on the selected programming-related item when the selected programming-related item is a channel.

308. The system defined in claim 184 wherein the user television equipment is configured to display a current program option in the interactive information display screen for displaying an interactive information display screen for a current program which is being shown on the selected programming-related item when the selected programming-related item is a network.

309. The system defined in claim 184 wherein the user television equipment is configured to display an upcoming program option in the interactive information display screen for displaying an

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interactive information display screen for a program which is to be shown on the selected programming-related item when the selected programming-related item is a channel.

310. The system defined in claim 184 wherein the user television equipment is configured to display an upcoming program option in the interactive information display screen for displaying an interactive information display screen for a program which is to be shown on the selected programming-related item when the selected programming-related item is a network.

311. The system defined in claim 184 wherein the user television equipment is configured to display a local channel option in the interactive information display screen for displaying an interactive information display screen for a channel which is a local affiliate of the selected programming-related item when the selected programming-related item is a network.

312. The system defined in claim 184 wherein the user television equipment is configured to display a program listings option in the interactive information display screen for displaying a list of programs scheduled to be shown on the selected programming-related item when the selected programming-related item is a channel.

313. The system defined in claim 184 wherein the user television equipment is configured to display

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a program listings option in the interactive information display screen for displaying a list of programs scheduled to be shown on the selected programming-related item when the selected programming-related item is a network.

314. The system defined in claim 184 wherein the user television equipment is configured to display a tune-to-channel option in the interactive information display screen when the selected programming-related item is a channel.

315. The system defined in claim 314 wherein the user television equipment is configured to rename the tune-to-channel option when the selected programming-related item is a music channel.

316. The system defined in claim 184 wherein the user television equipment is configured to display a view option in the interactive information display screen for viewing the selected programming-related item when the selected programming-related item is a program.

317. The system defined in claim 184 wherein the user television equipment is configured to display a tune-to-channel option in the interactive information display screen for tuning to a channel which will show the selected programming-related item when the selected programming-related item is an upcoming program.

318. A television system, comprising:

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user television equipment on which an interactive application is at least partially implemented, wherein the user television equipment is configured to provide a user with an opportunity to select one of multiple programming-related items to access associated information on the item and is further configured to display an interactive information display screen that includes the information associated with a selected item and that includes user-selectable hyperlinks to other information display screens having information about programming-related items that are different from but related to the selected item.

319. The system defined in claim 318 wherein the user television equipment is further configured to provide various features, to determine which features are available to be exercised in connection with the selected programming-related item, and to provide the determined features for the selected programming-related item in the information display screen.

320. The system defined in claim 318 wherein the user television equipment is further configured to provide a reminder option which is selectable from the interactive information display screen for exercising a program guide reminder feature in connection with the selected programming-related item.

321. The system defined in claim 318 wherein the user television equipment is further configured to provide a view option which is selectable from the

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interactive information display screen for exercise in connection with the selected programming-related item.

322. The system defined in claim 318 wherein the user television equipment is further configured to provide a listen option which is selectable from the interactive information display screen for exercising a listen feature in connection with the selected programming-related item.

323. The system defined in claim 318 wherein the user television equipment is further configured to provide a tune-to-channel option which is selectable from the interactive information display screen for exercising a tune-to-channel feature in connection with the selected programming-related item.

324. The system defined in claim 318 wherein the user television equipment is further configured to provide a parental control option which is selectable from the interactive information display screen for exercising a parental control feature in connection with the selected programming-related item.

325. The system defined in claim 318 wherein the user television equipment is further configured to provide a purchase option which is selectable from the interactive information display screen for exercising a purchase feature in connection with the selected programming-related item.

326. The system defined in claim 318 wherein the user television equipment is further configured to

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provide an other channel/time option which is selectable from the interactive information display screen for exercising a program guide other channel/time feature in connection with the selected programming-related item.

327. The system defined in claim 318 wherein the user television equipment is further configured to provide an a preference profile option which is selectable from the interactive information display screen for exercising a preference profile feature in connection with the selected programming-related item.

328. The system defined in claim 318 wherein the user television equipment is further configured to provide a record option which is selectable from the interactive information display screen for exercising a record feature in connection with the selected programming-related item.

329. The system defined in claim 318 wherein the user television equipment is further configured to provide a package hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a package which includes the selected programming-related item.

330. The system defined in claim 318 wherein the user television equipment is further configured to provide a network hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen

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for a network which is related to the selected programming-related item.

331. The system defined in claim 318 wherein the user television equipment is further configured to provide a channel hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a channel which is related to the selected programming-related item.

332. The system defined in claim 318 wherein the user television equipment is further configured to determine whether the selected programming-related item is a channel and to provide a current program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a current program on the channel.

333. The system defined in claim 318 wherein the user television equipment is further configured to determine whether the selected programming-related item is a channel and to provide an upcoming program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for an upcoming program on the channel.

334. The system defined in claim 318 wherein the user television equipment is further configured to provide a web page option which is selectable from the interactive information display screen for displaying a

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web page which is related to the selected programming-related item.

335. The system defined in claim 318 wherein the user television equipment is further configured to provide a chat session option which is selectable from the interactive information display screen for displaying a chat session which is related to the selected programming-related item.

336. The system defined in claim 318 wherein the user television equipment is further configured to provide an e-mail option which is selectable from the interactive information display screen for drafting an e-mail message to an address related to the selected programming-related item.

337. The system defined in claim 318 wherein the user television equipment is further configured to display a status indicator within the interactive information display screen for providing status information on the selected programming-related item.

338. The system defined in claim 318 wherein the user television equipment is further configured to provide options for the selected programming-related item and to display the option within the interactive information display screen.

339. The system defined in claim 318 wherein the user television equipment is further configured to provide options for the selected programming-related

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item, to display some of the options, and to scroll to display the other options.

340. The system defined in claim 318 wherein the user television equipment is further configured to provide a program listings option which is selectable from the interactive information display screen for exercising a program guide program listing feature in connection with the selected programming-related item.

341. The system defined in claim 318 wherein the user television equipment is further configured to providing an exit option which is selectable from the interactive information display screen for exiting the interactive information display screen.

342. The system defined in claim 318 wherein the user television equipment is further configured to provide a last option which is selectable from the interactive information display screen for returning to a previous screen which was accessed by the user.

343. The system defined in claim 318 wherein the user television equipment is further configured to scroll the information about the selected programming-related item.

344. The system defined in claim 318 wherein the user television equipment is further configured to provide an add-to-favorites option which is selectable from the interactive information display screen for exercising a favorites feature in connection with the selected programming-related item.

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345. The system defined in claim 318 wherein the user television equipment is further configured to provide a program hyperlink which is selectable from the interactive information display screen for displaying an interactive information display screen for a program which is related to the selected programming-related item.

346. The system defined in claim 318 wherein the information display screen includes a graphic image.

347. The system defined in claim 318 wherein the information display screen includes a graphic image which is related to the selected programming-related item.

348. The system defined in claim 318 wherein the information display screen includes a graphic image which is selectable to access an information display screen for the graphic image.

349. The system defined in claim 318 wherein the information display screen includes video.

350. The system defined in claim 318 wherein the information display screen includes broadcast video related to the selected programming-related item.

351. The system defined in claim 318 wherein the information display screen includes broadcast video related to video that a user was previously viewing.

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352. The system defined in claim 318 wherein the information display screen includes a video clip.

353. The system defined in claim 318 wherein the information display screen includes a video clip which is related to the selected programming-related item.

354. The system defined in claim 318 wherein the information display screen includes a video clip to provide a preview for the selected programming-related item.

355. The system defined in claim 318 wherein the information display screen includes a video clip which is selectable to access an interactive information display screen for the video clip.

356. The system defined in claim 318 wherein the information display screen includes an advertisement.

357. The system defined in claim 318 wherein the information display screen includes an advertisement which is related to the selected programming-related item.

358. The system defined in claim 318 wherein the information display screen includes an advertisement which is selectable to access an interactive information display screen for the advertisement.

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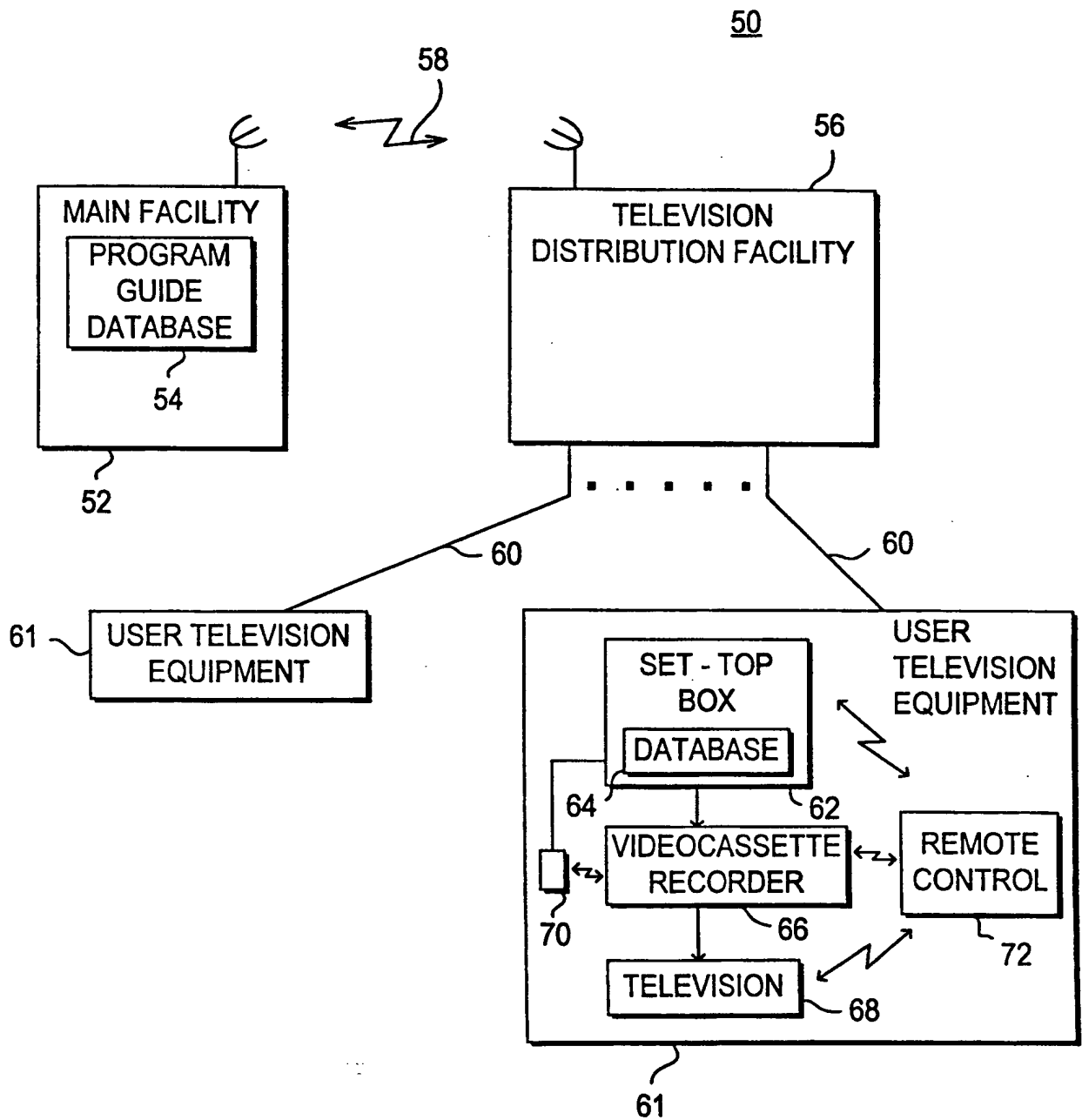


FIG. 1

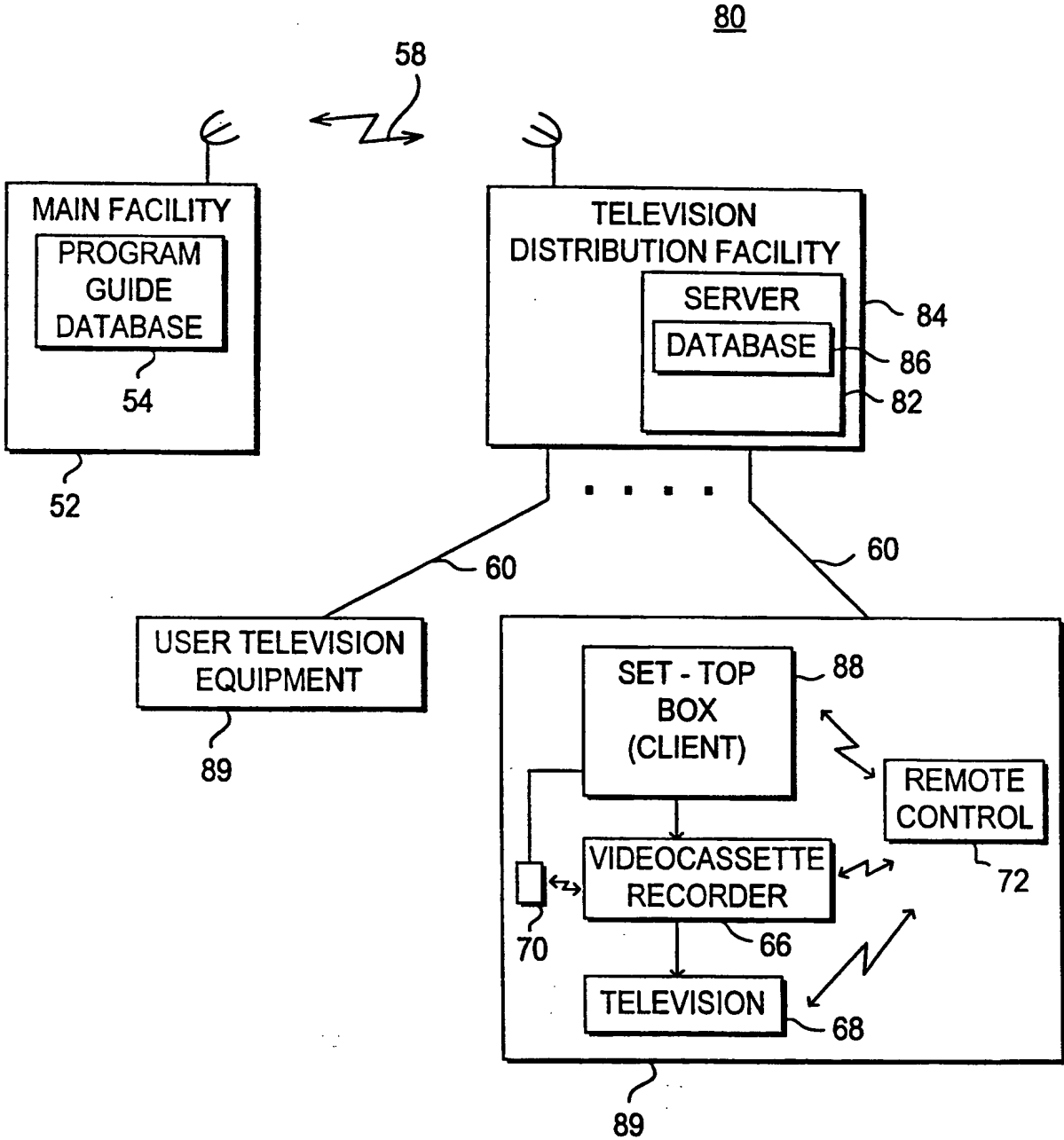


FIG. 2

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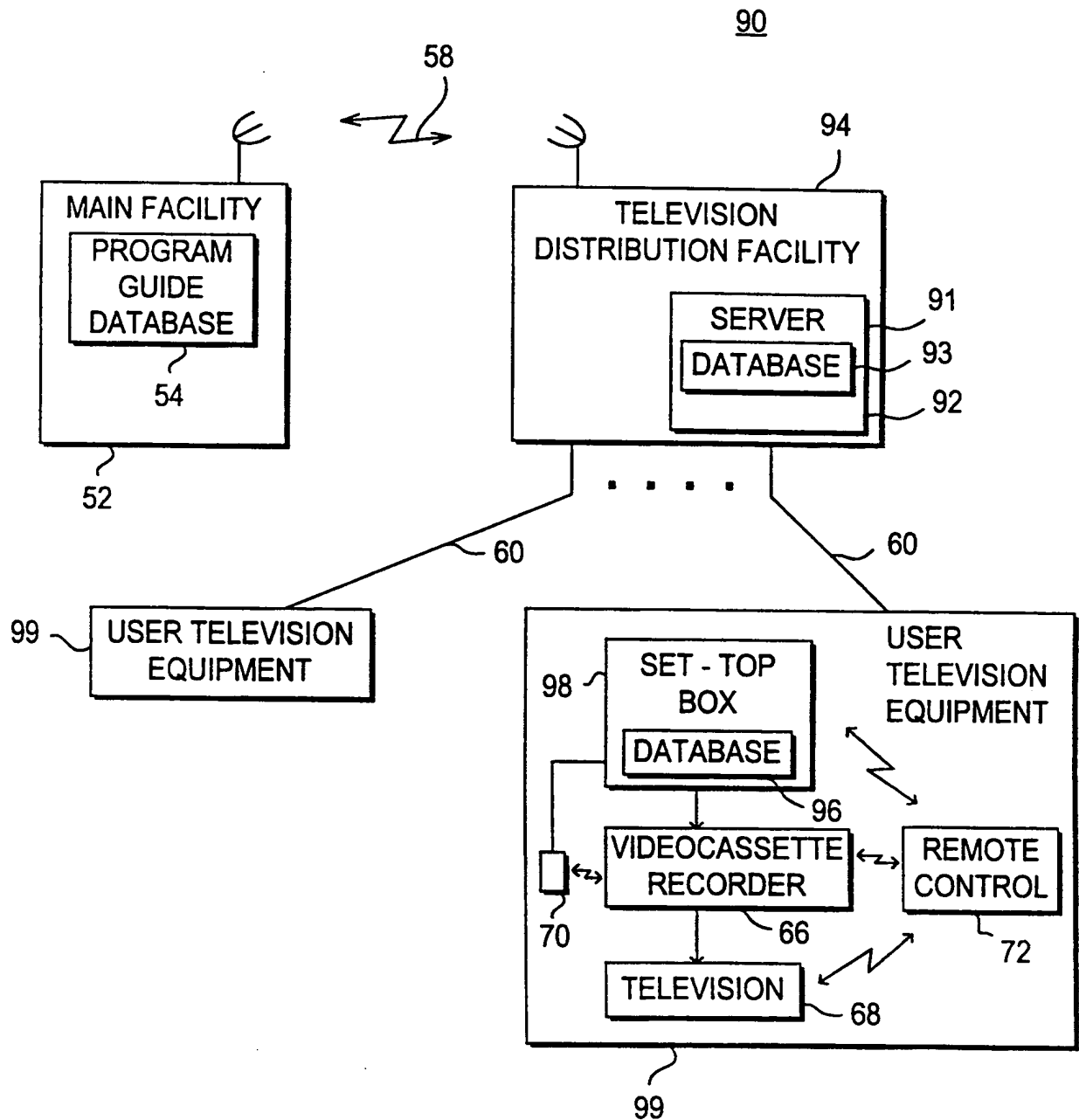


FIG. 3

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EXAMPLES OF INITIATING DISPLAY SCREENS

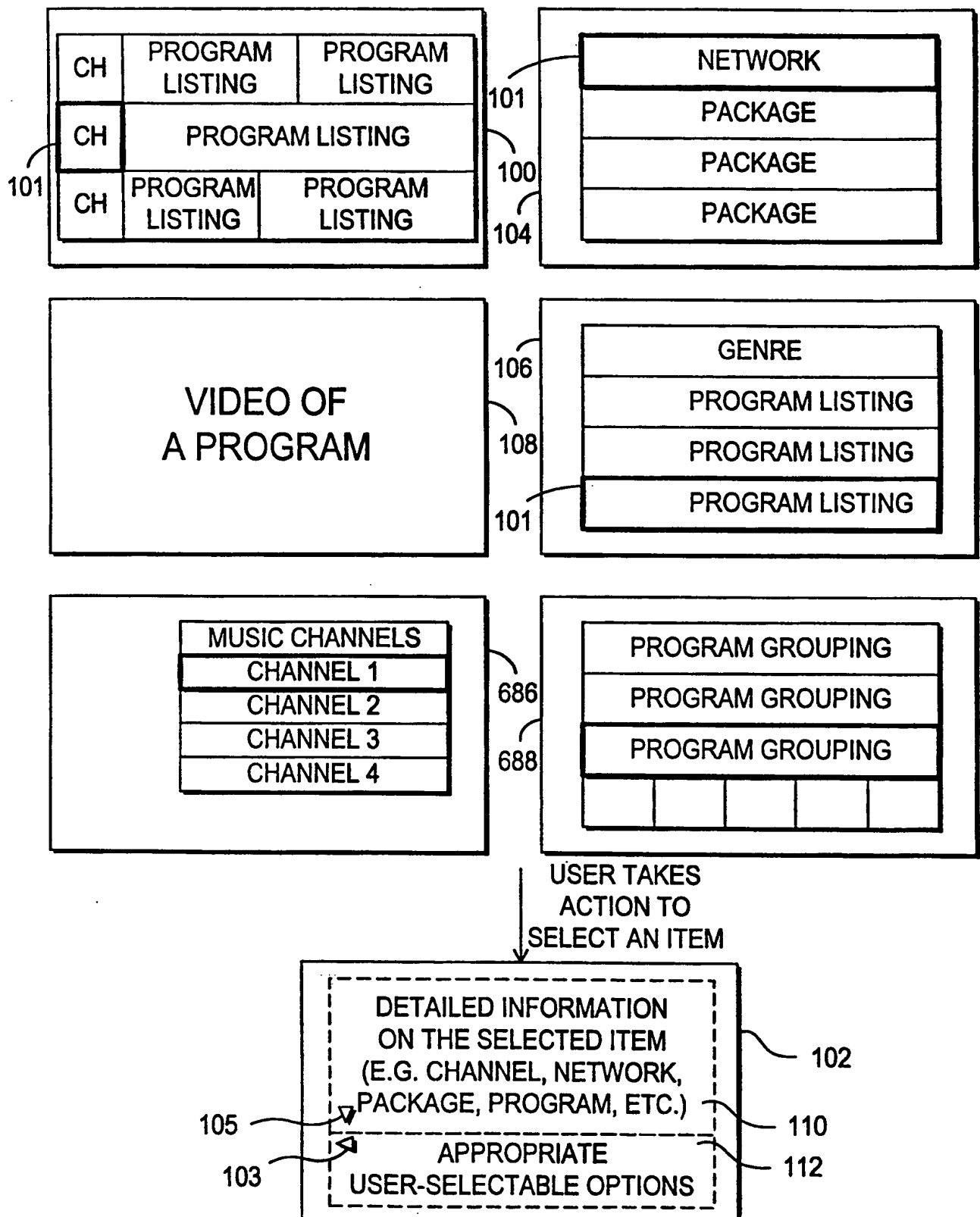


FIG. 4a

INTERACTIVE INFORMATION DISPLAY SCREEN
FOR A SELECTED PROGRAM

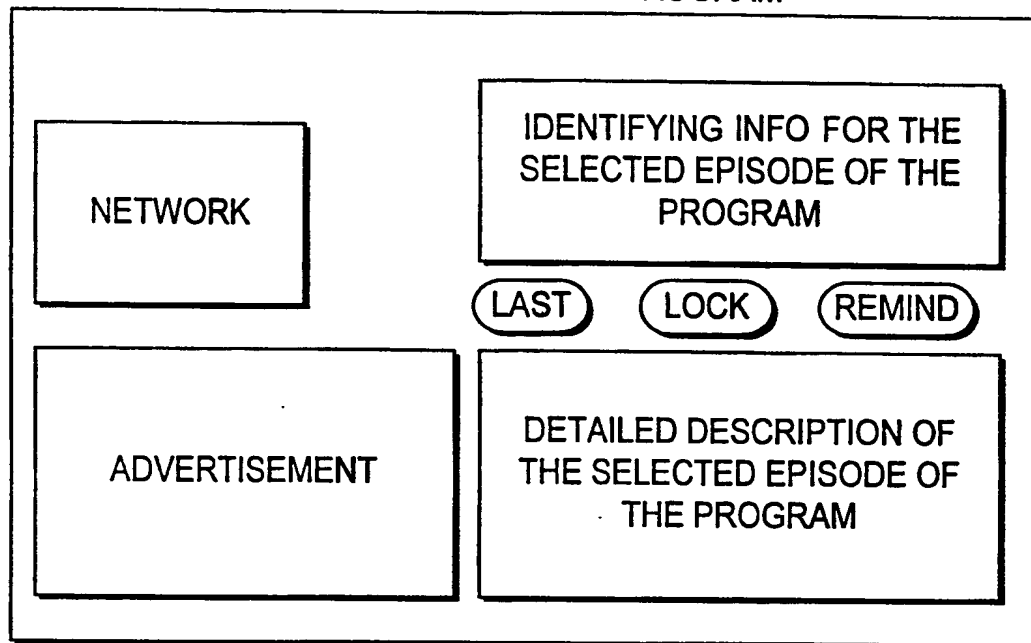


FIG. 4b

INTERACTIVE INFORMATION DISPLAY SCREEN
FOR A SELECTED PAY-PER-NEW CHANNEL

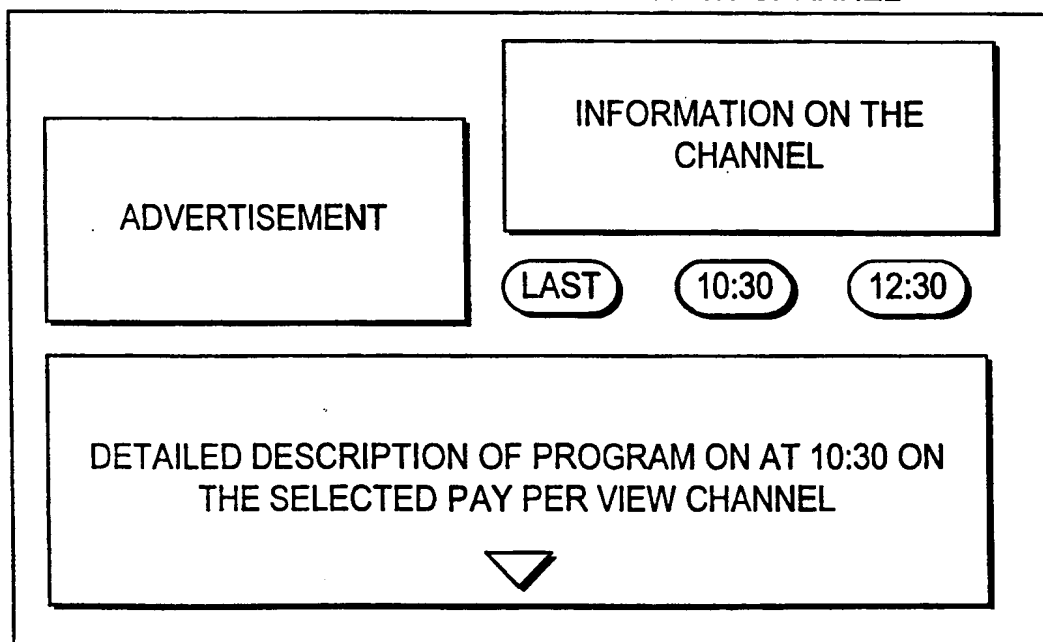
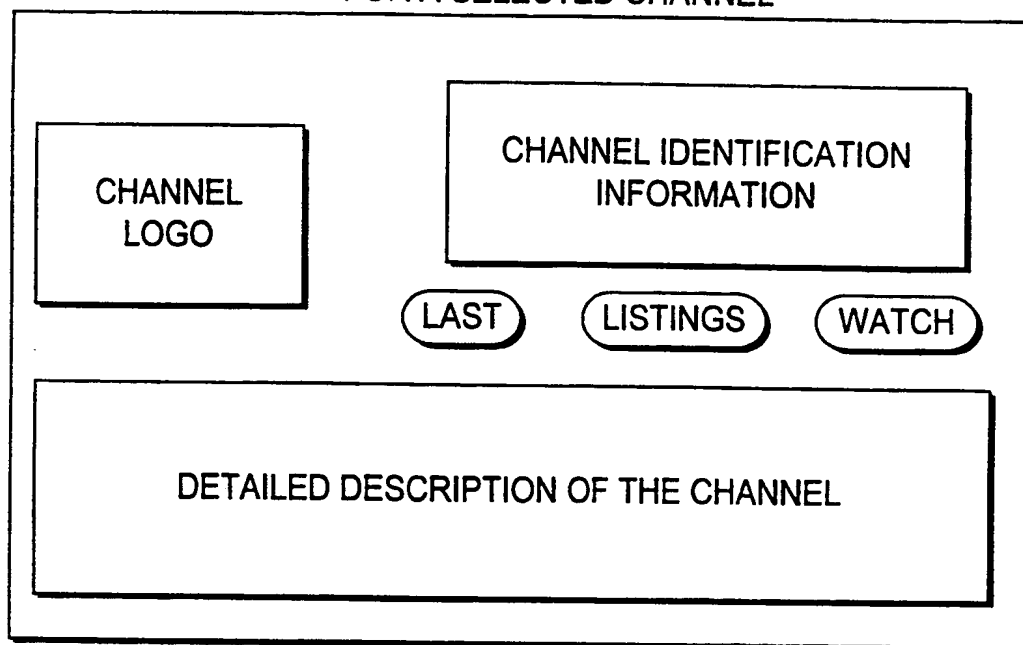
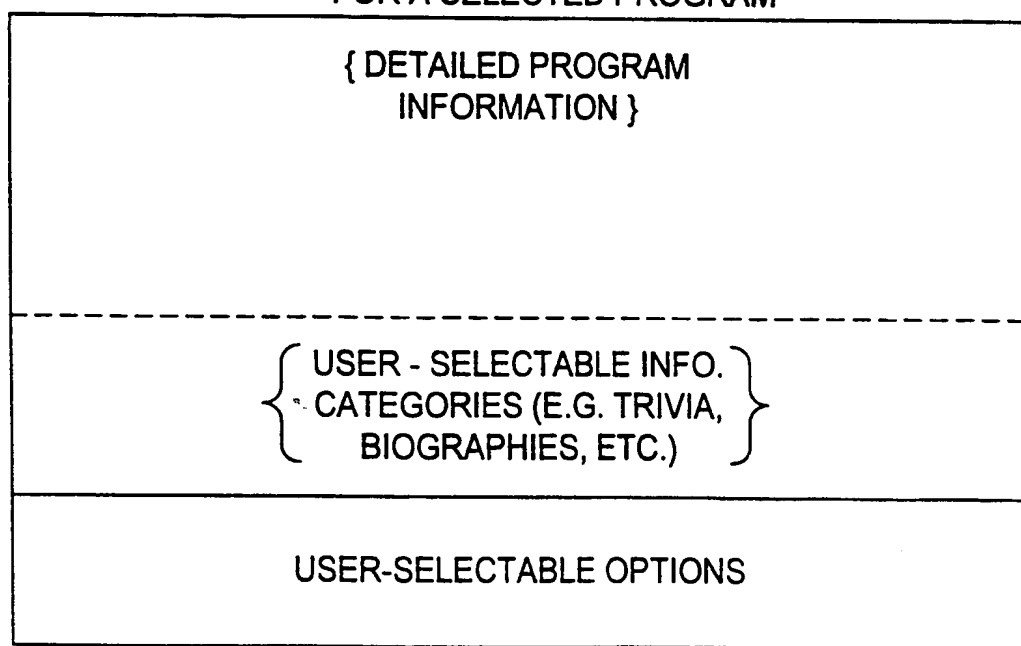


FIG. 4c

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INTERACTIVE INFORMATION DISPLAY SCREEN
FOR A SELECTED CHANNEL*FIG. 4d*INTERACTIVE INFORMATION DISPLAY SCREEN
FOR A SELECTED PROGRAM*FIG. 4e*

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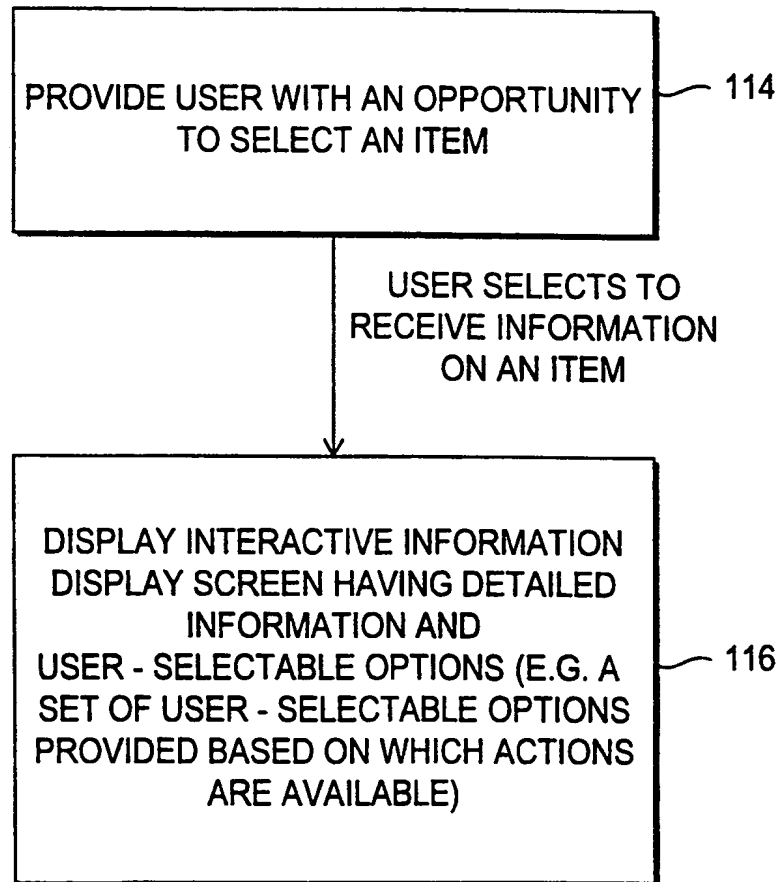
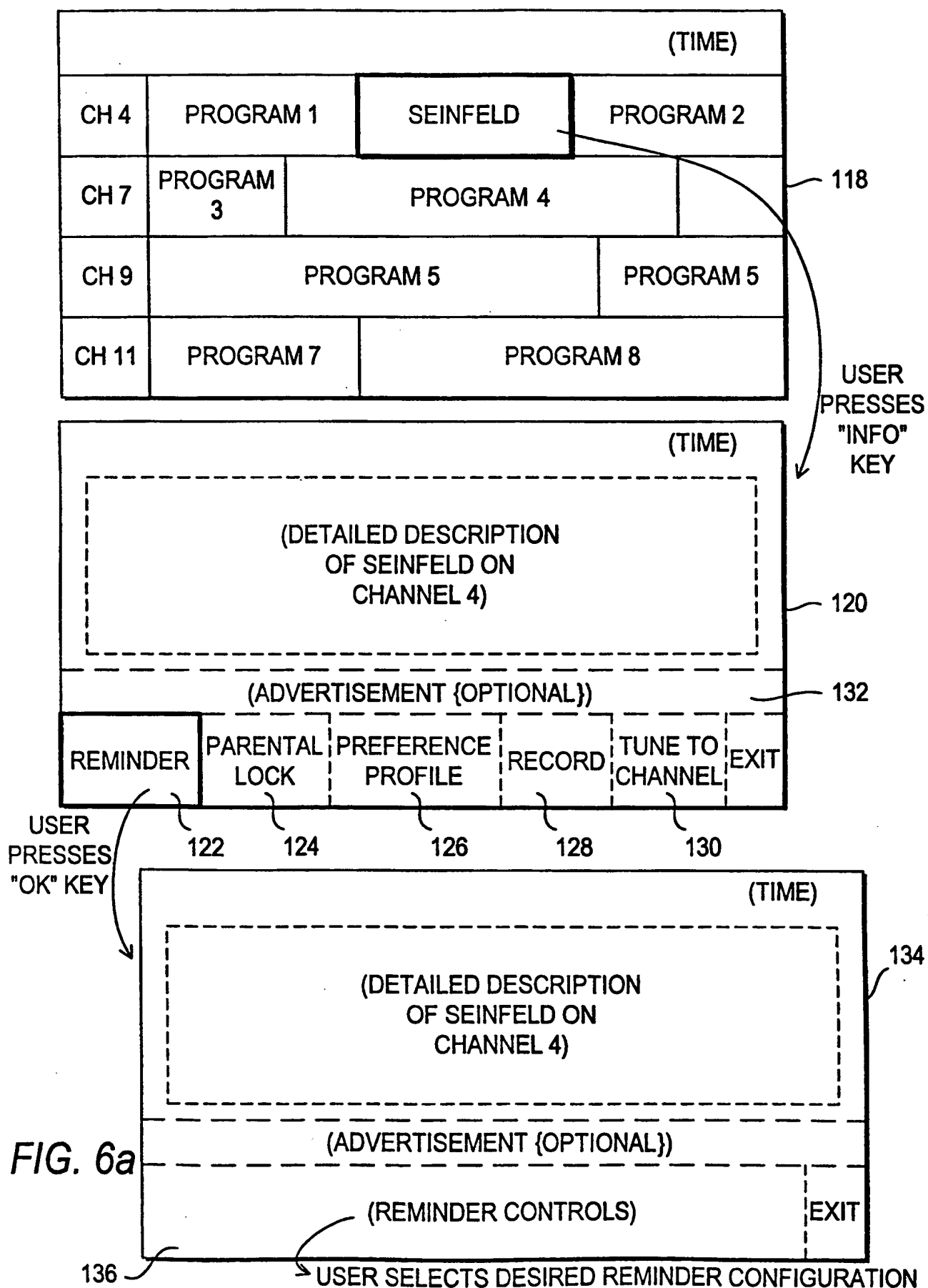


FIG. 5



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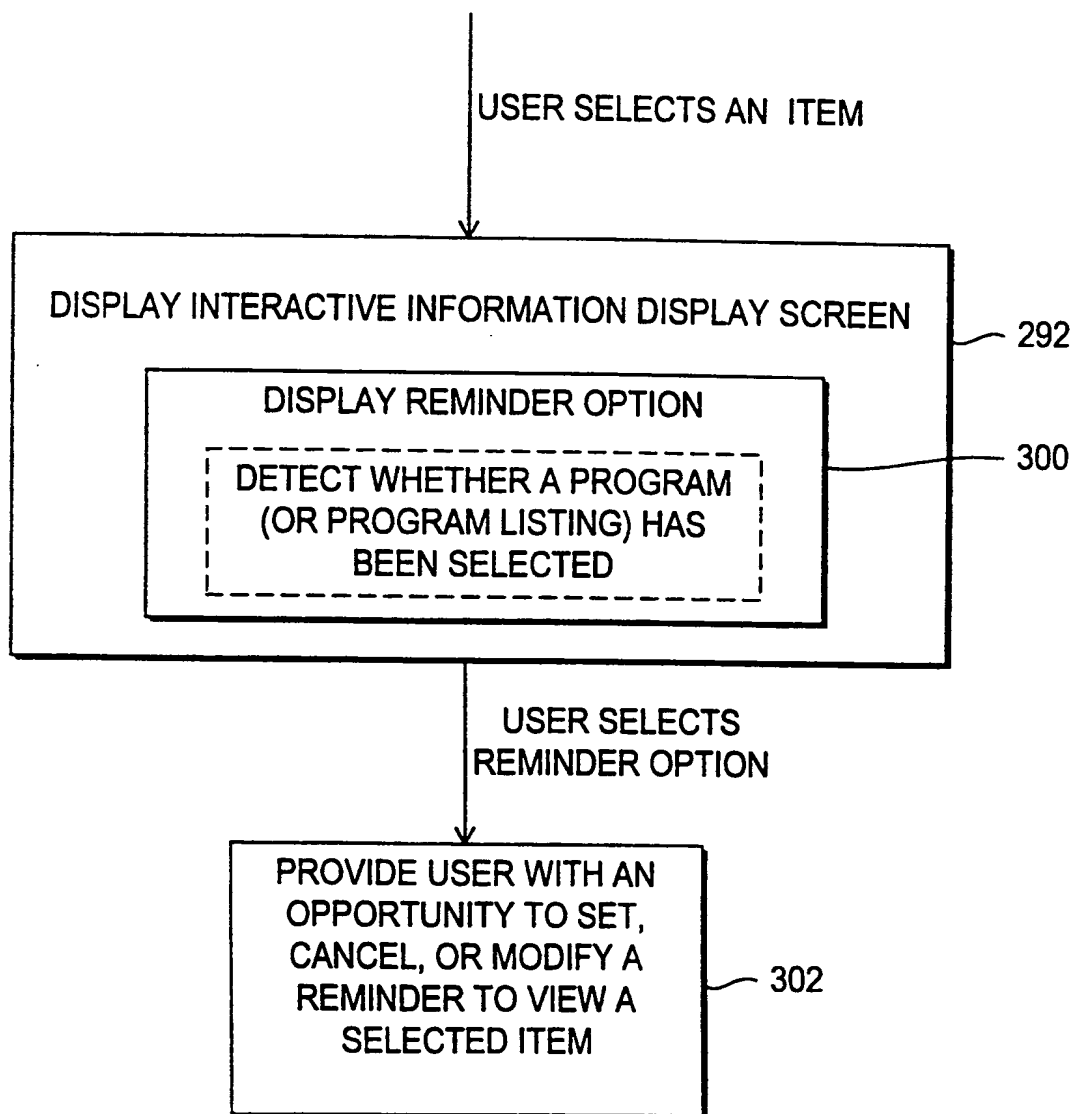
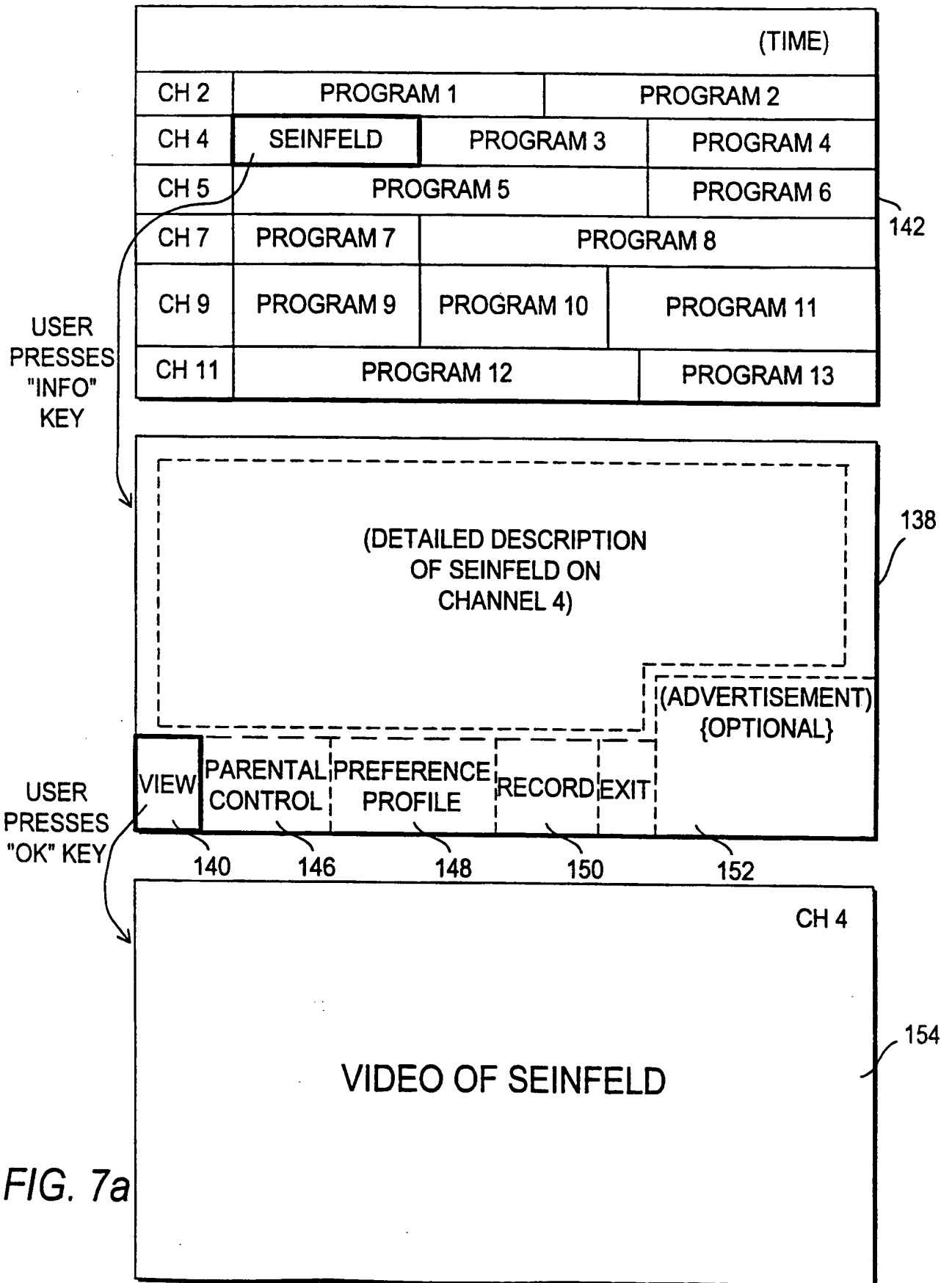
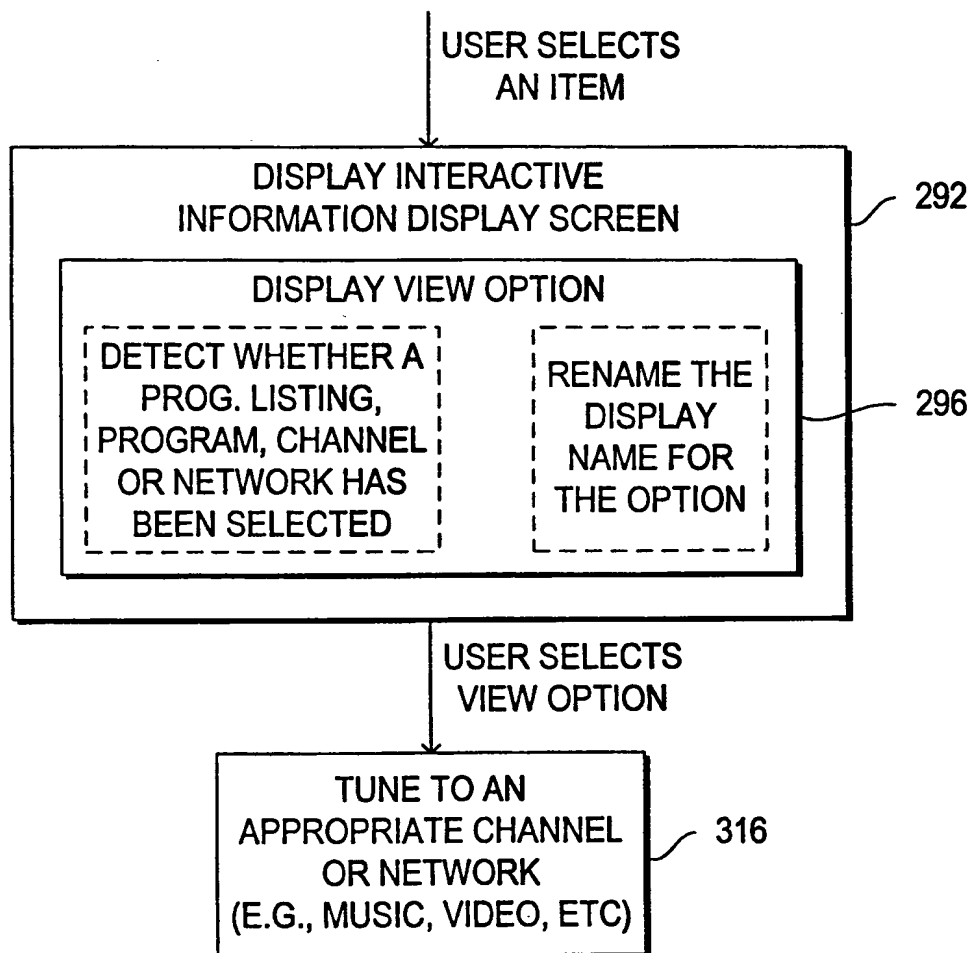


FIG. 6b

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*FIG. 7b*

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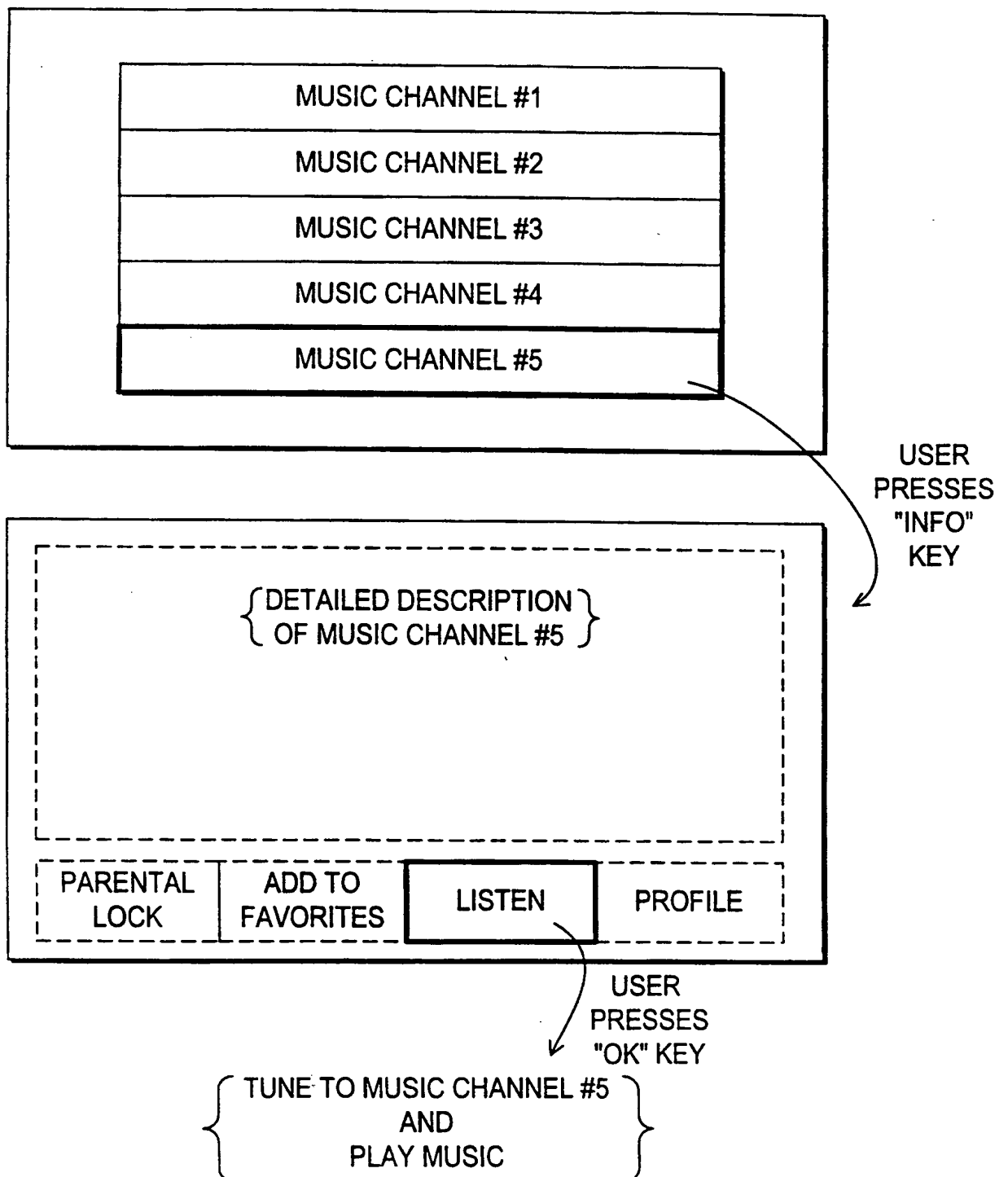
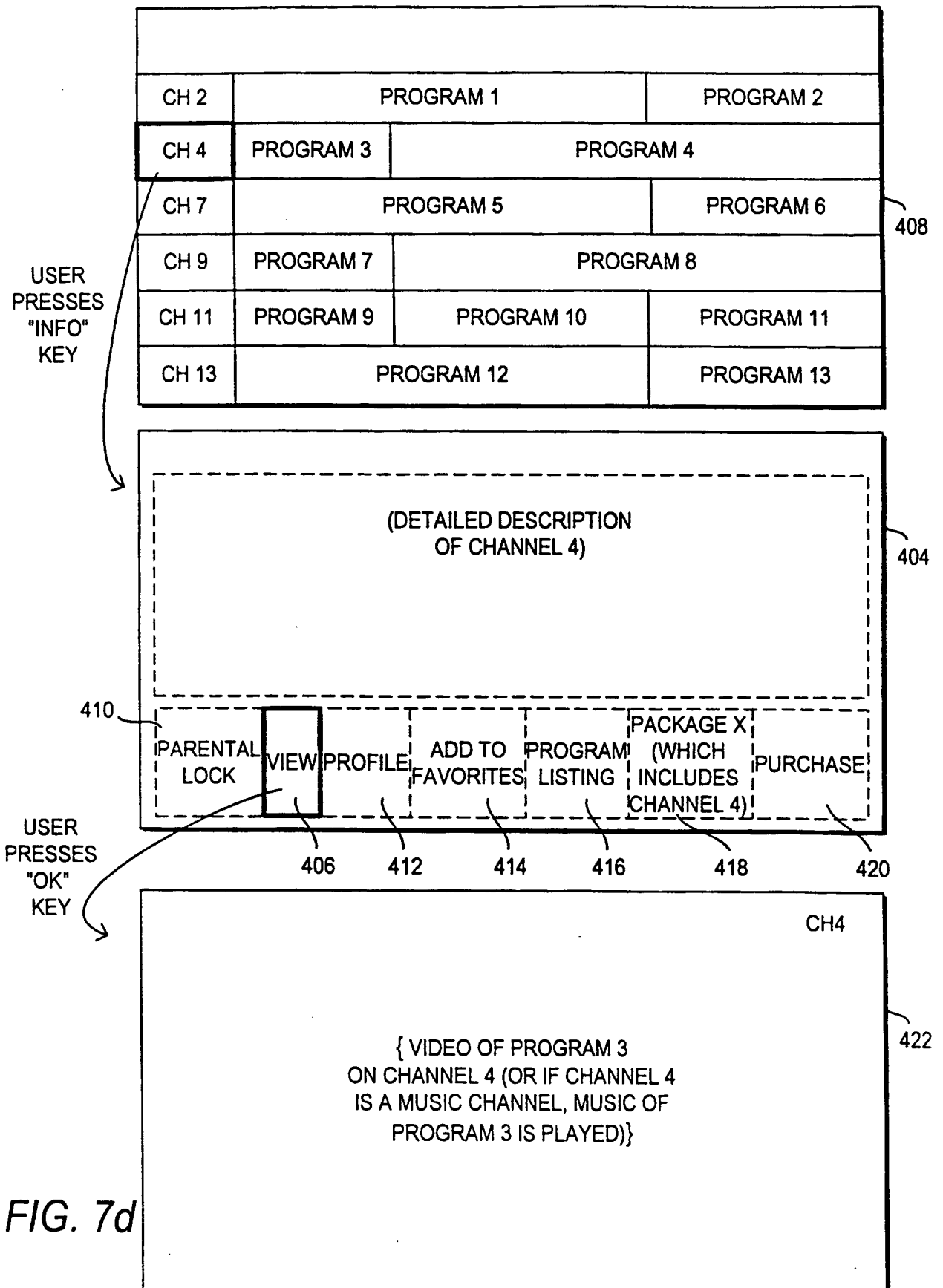


FIG. 7c



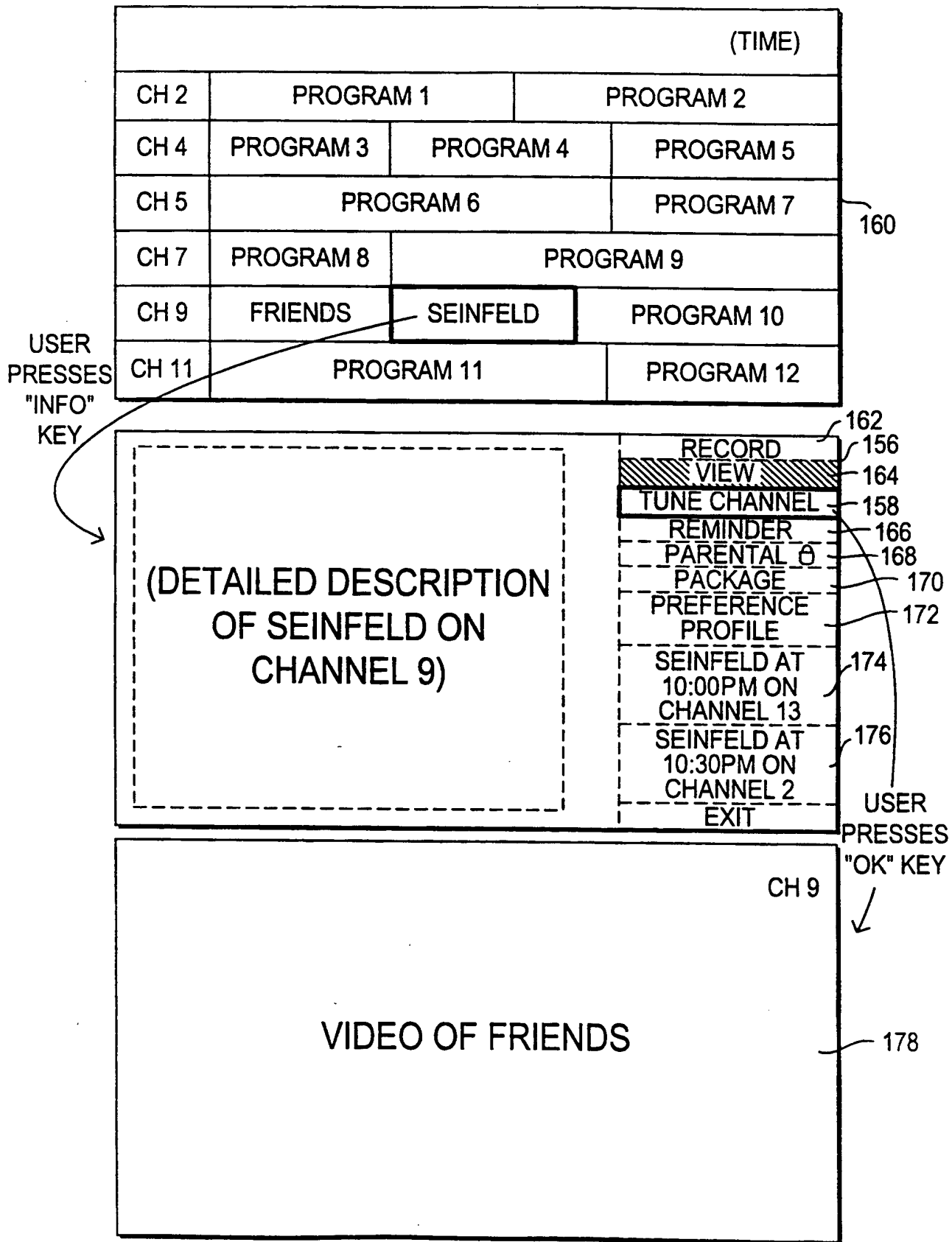


FIG. 8a

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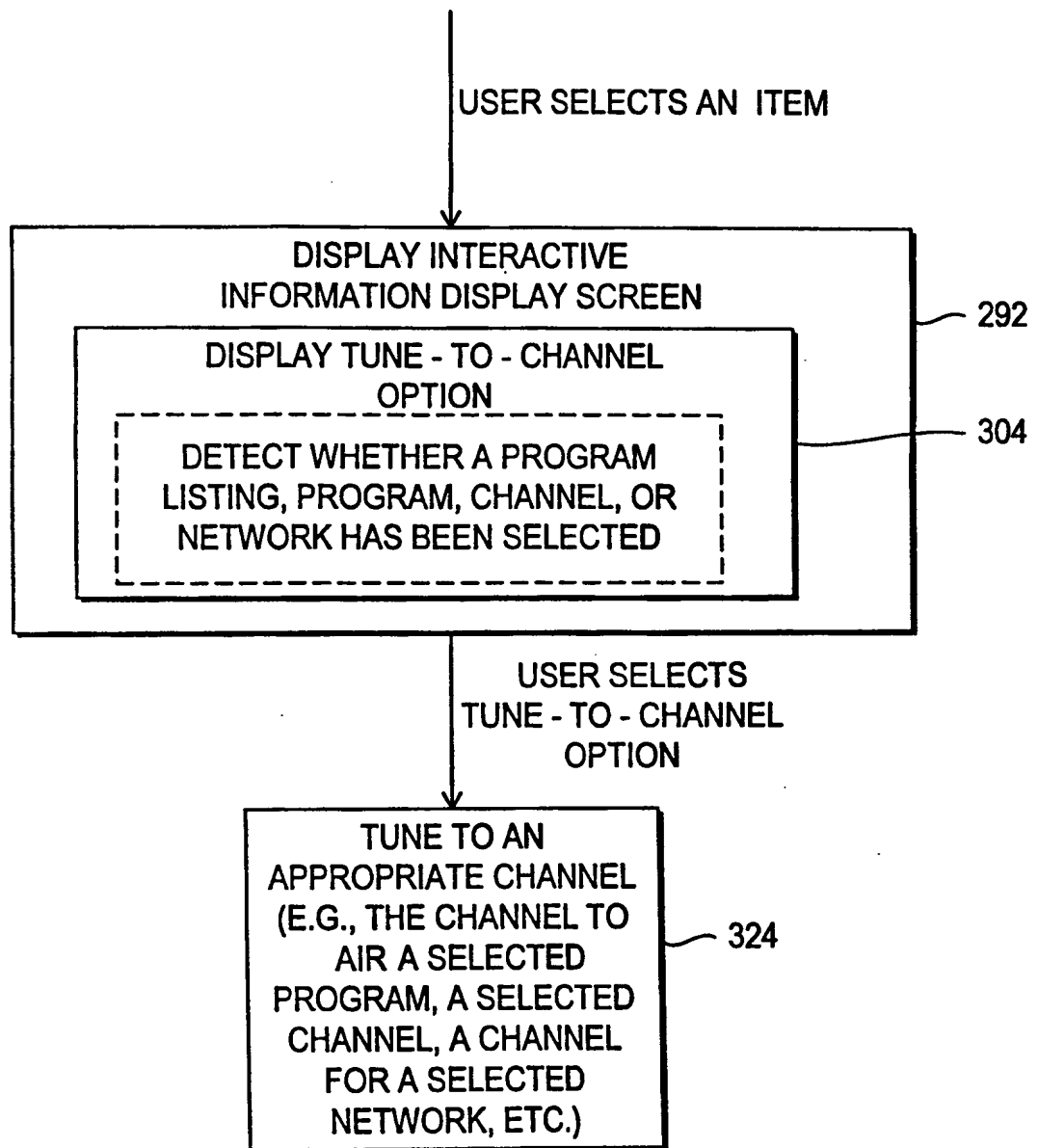
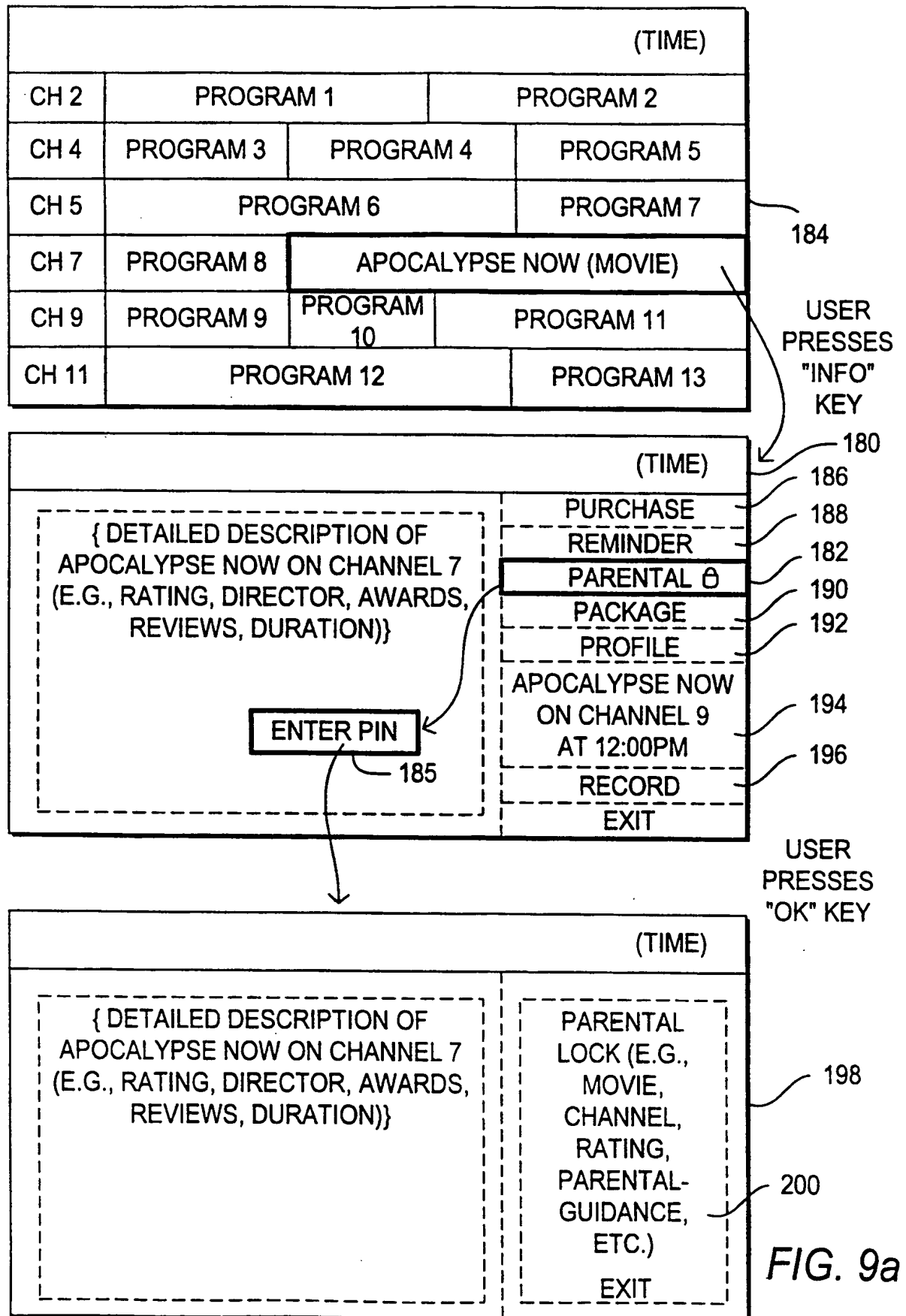


FIG. 8b



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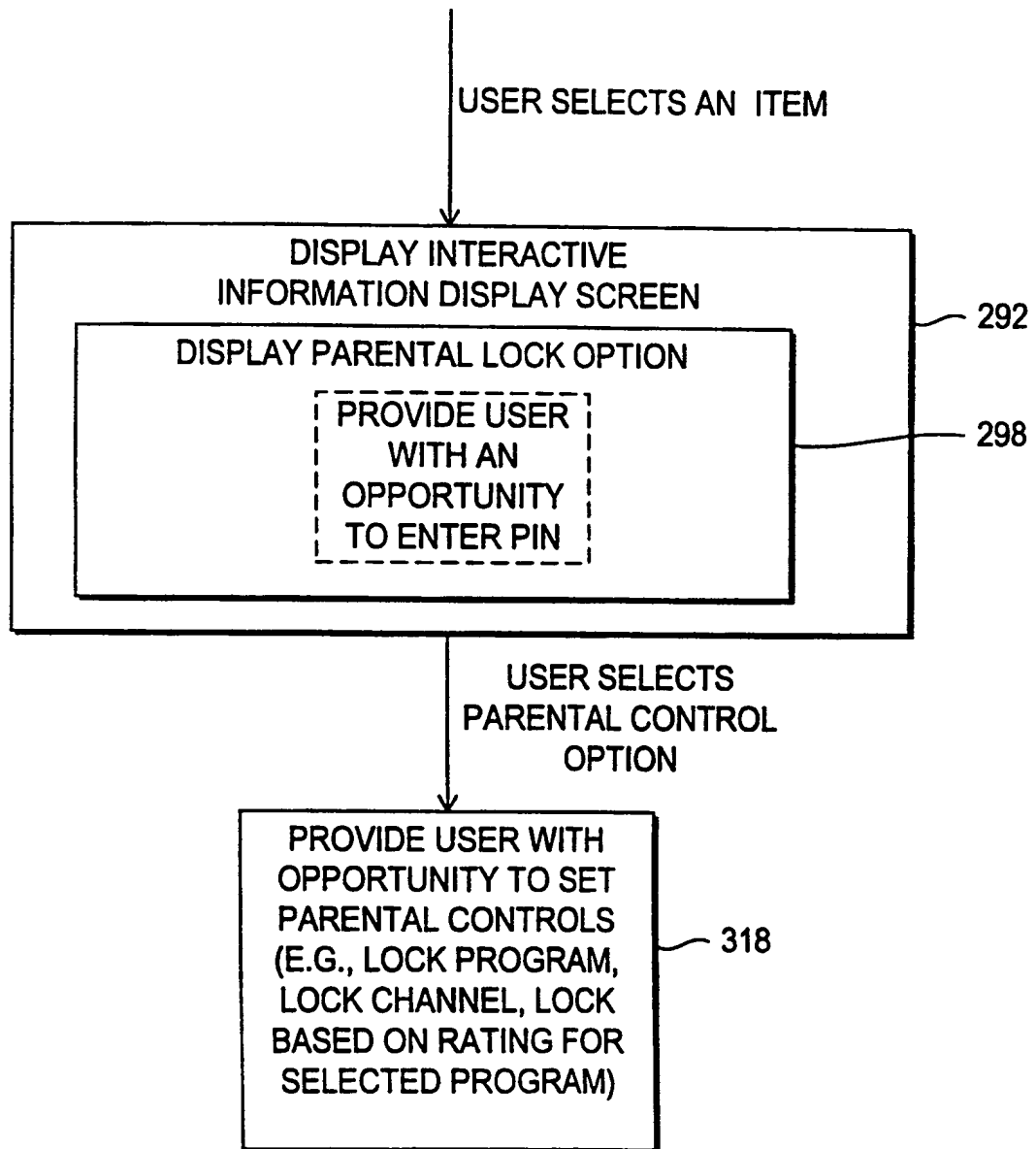
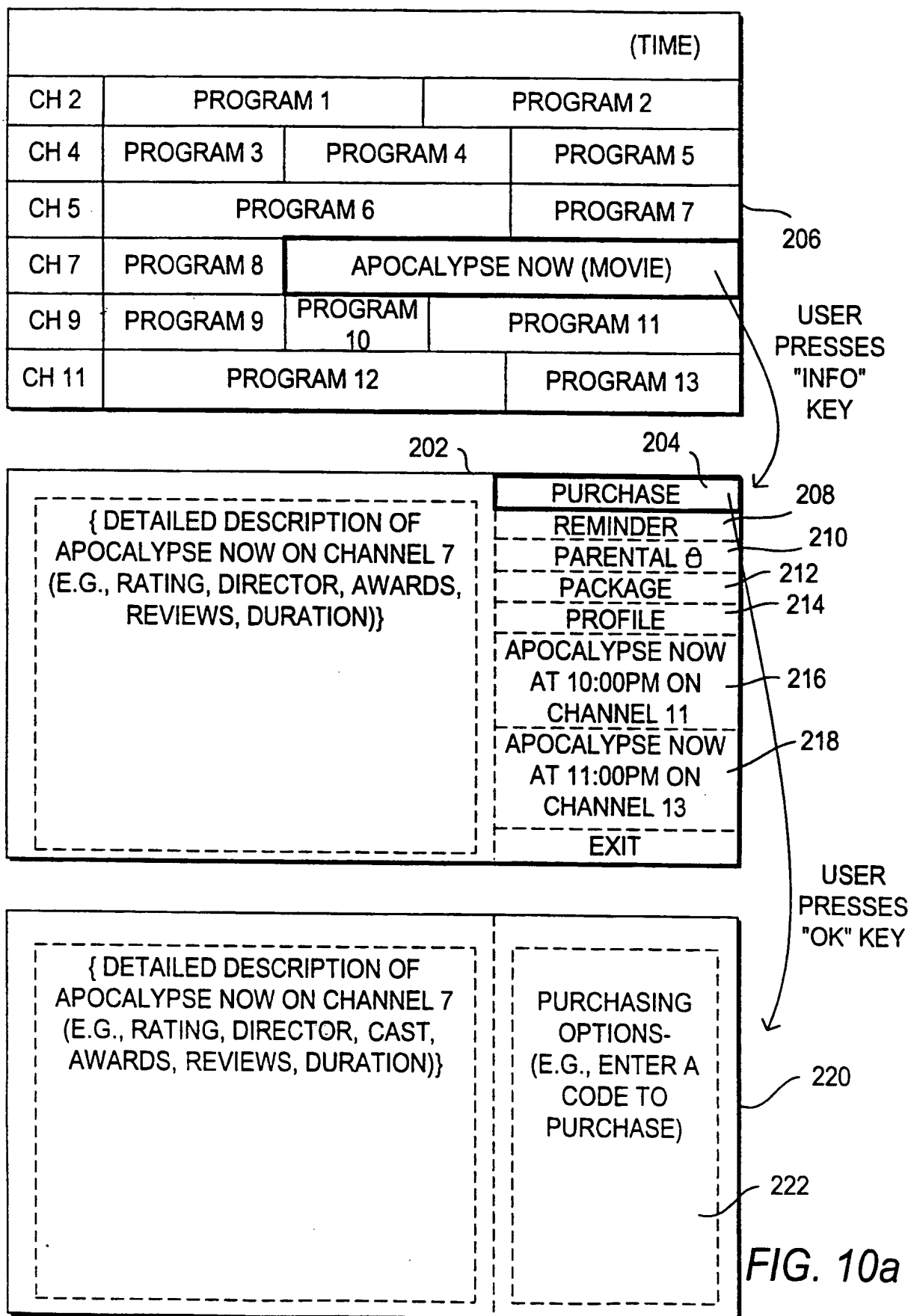


FIG. 9b



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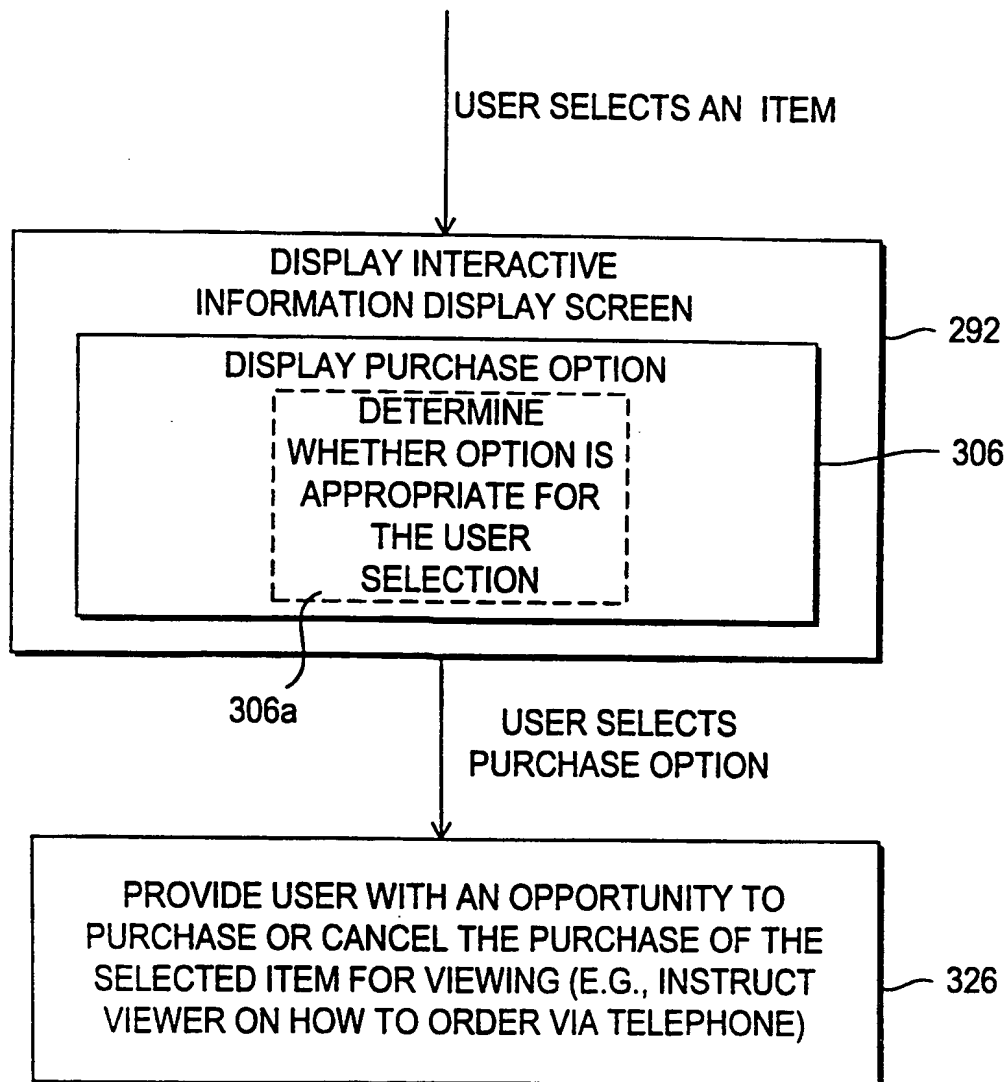


FIG. 10b

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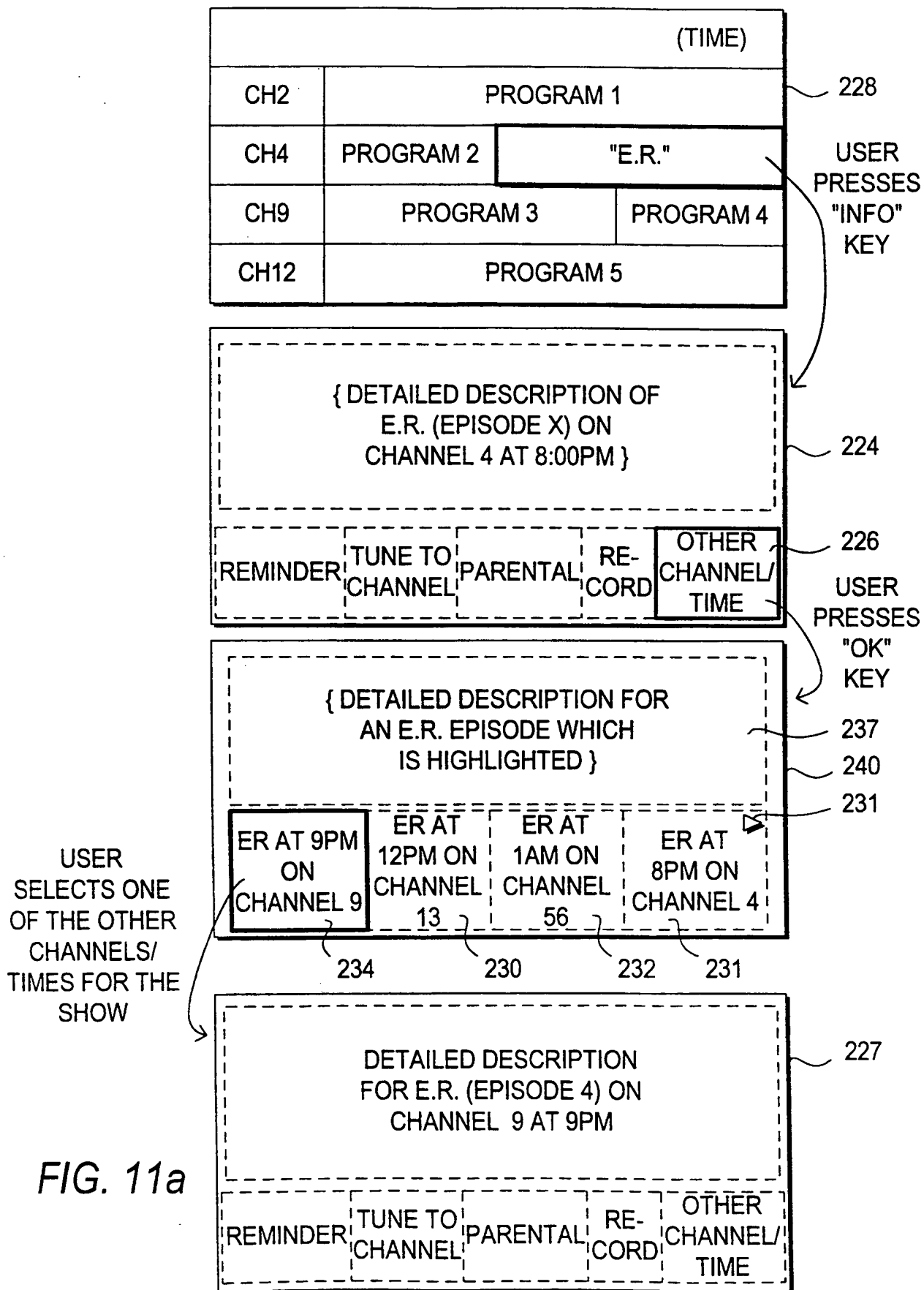


FIG. 11a

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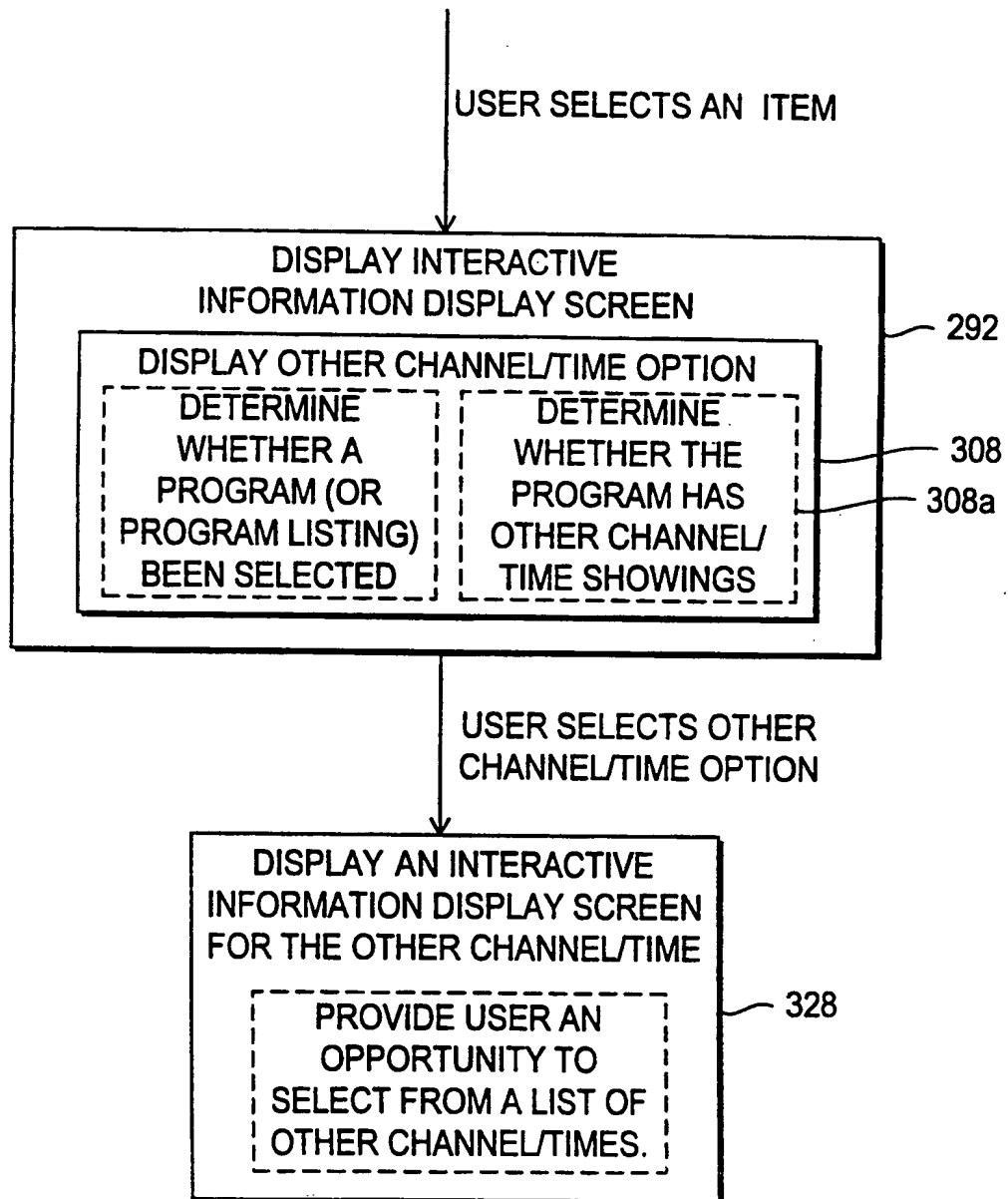
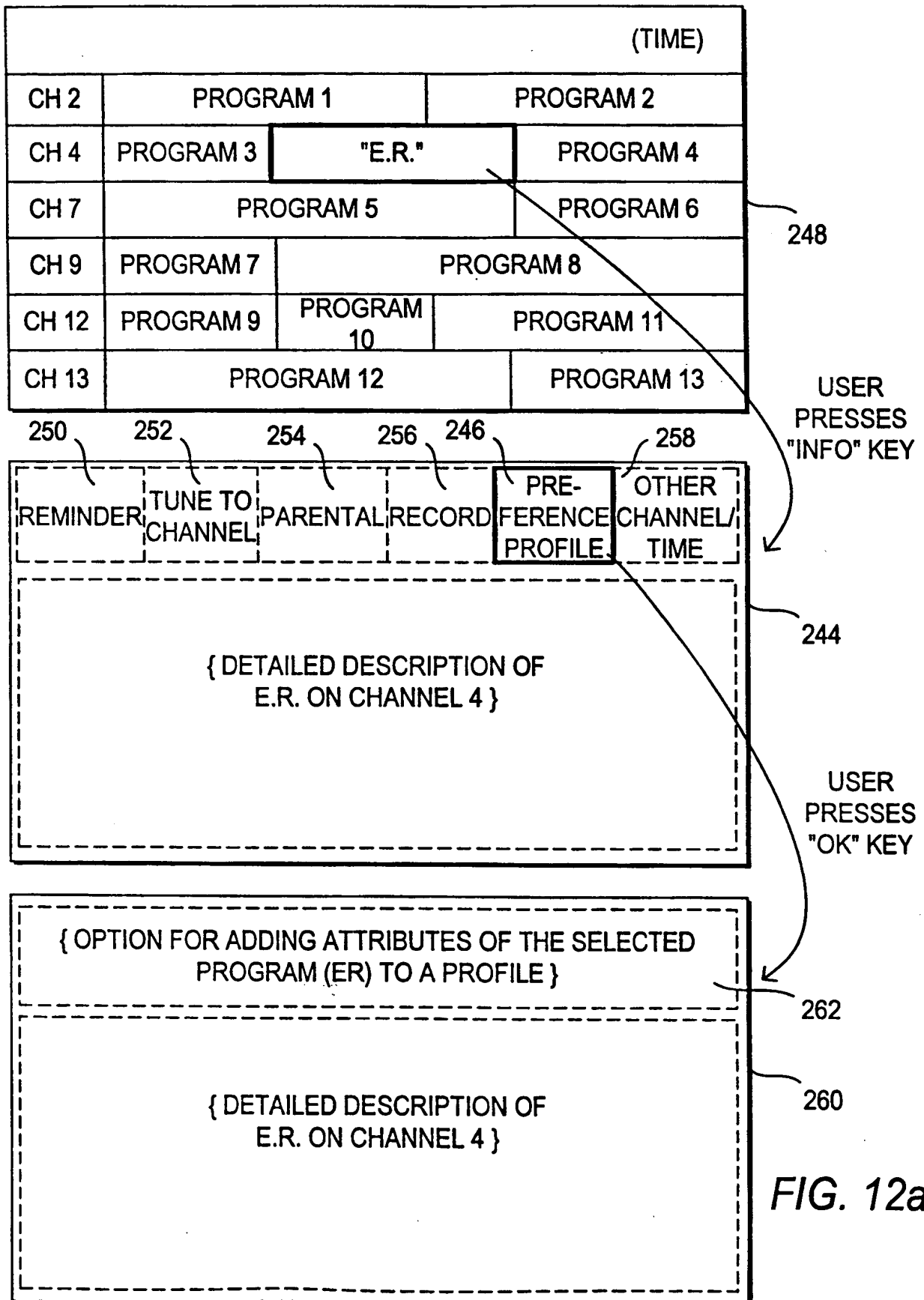


FIG. 11b

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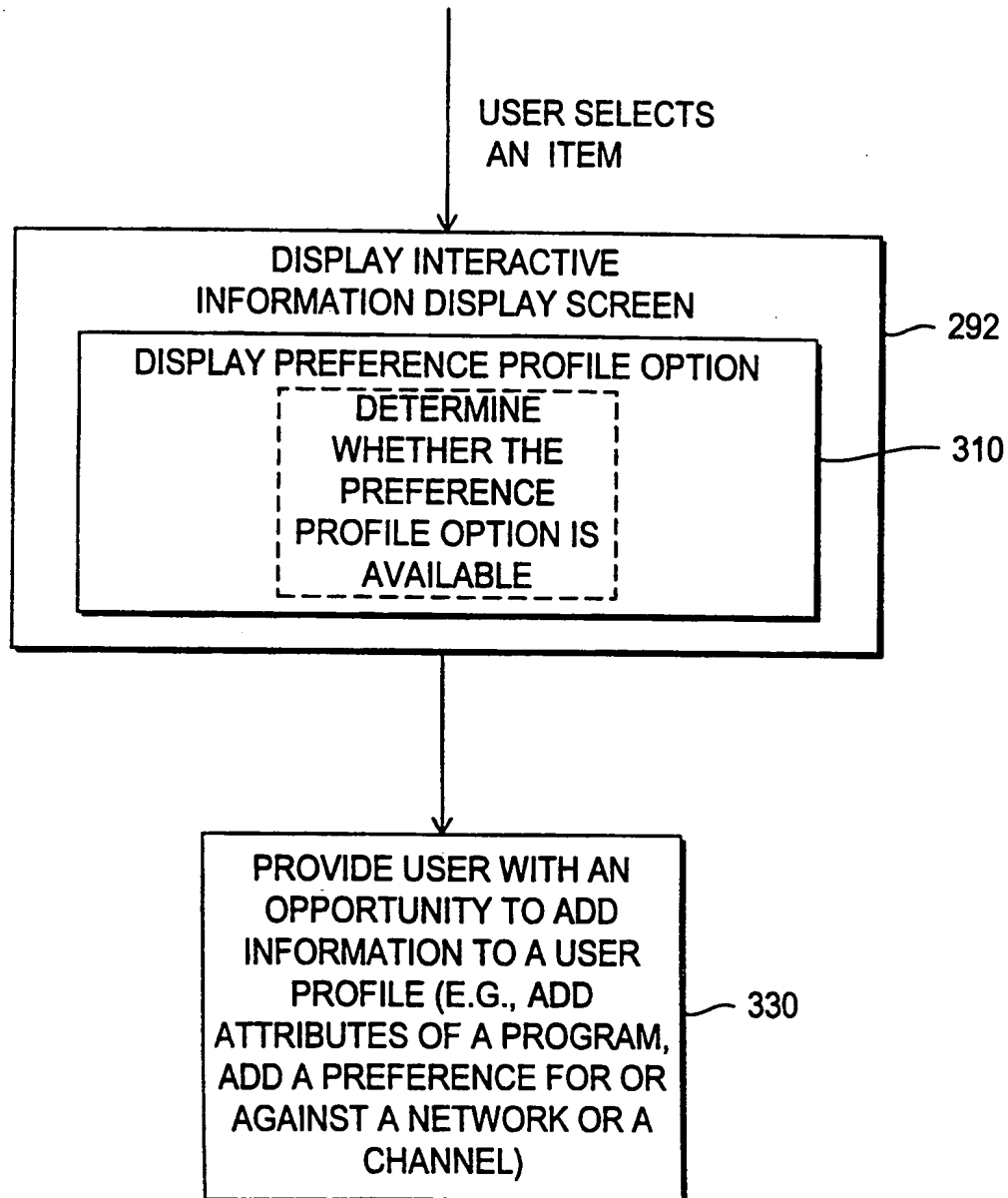


FIG. 12b

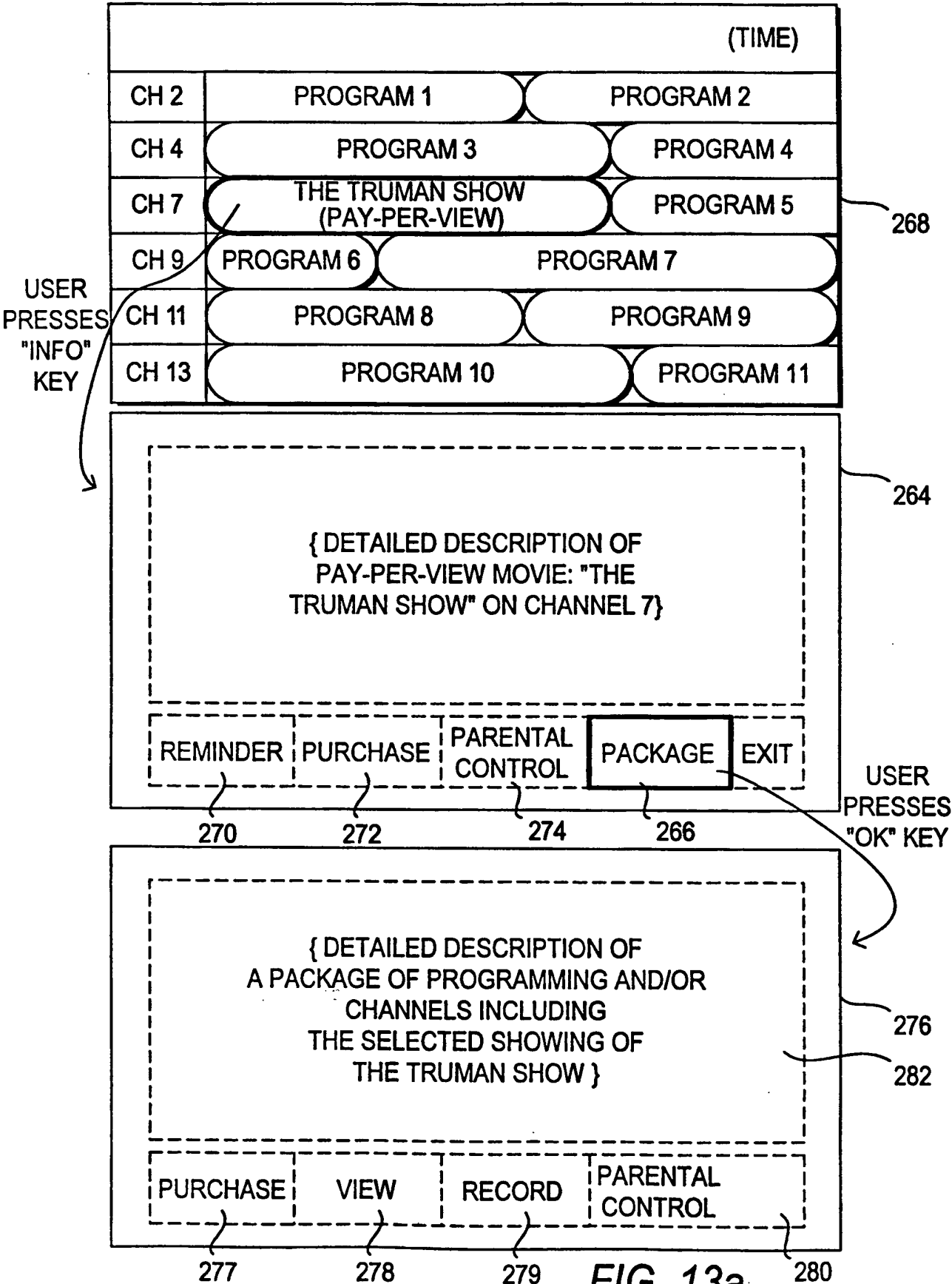
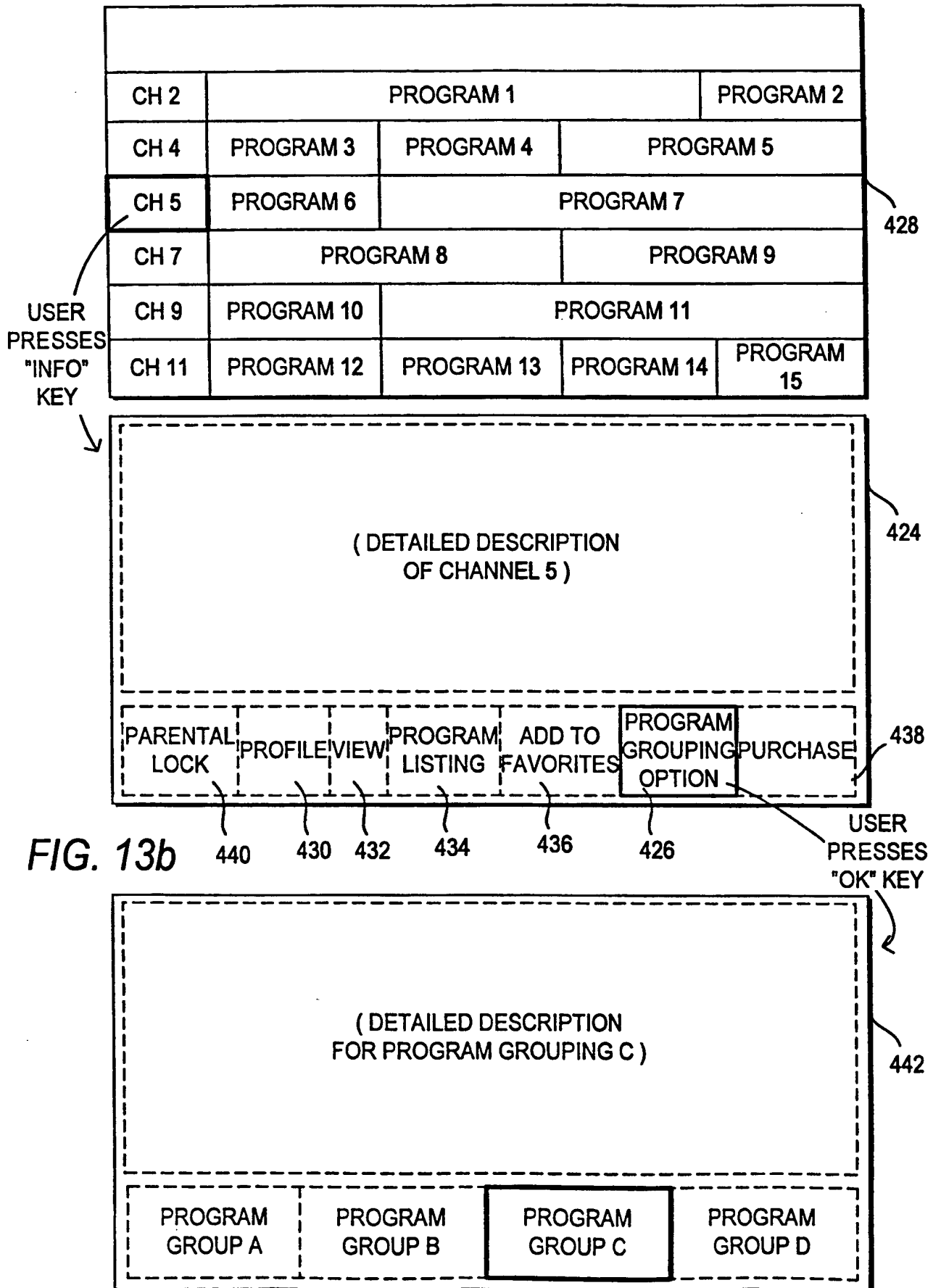


FIG. 13a



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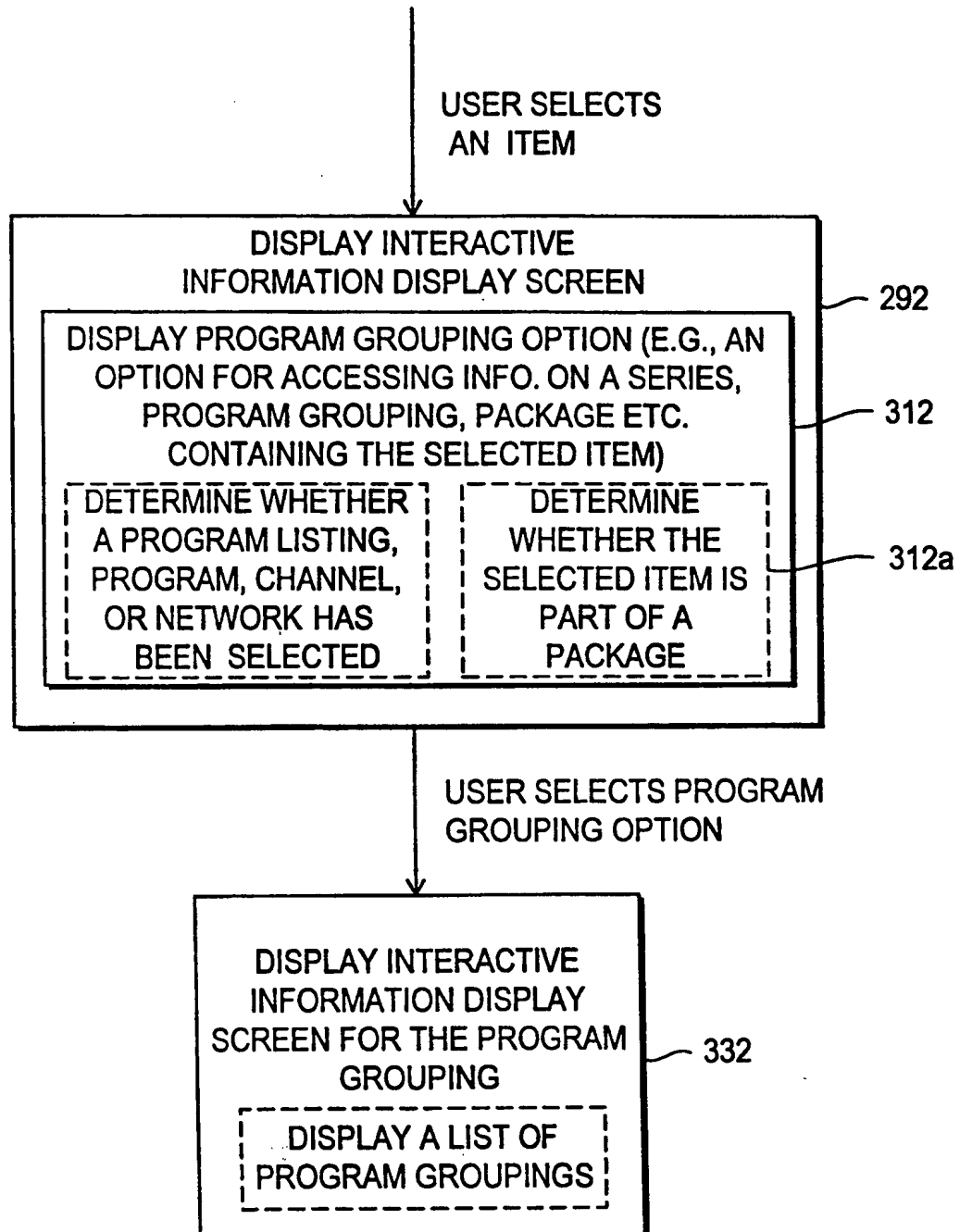


FIG. 13c

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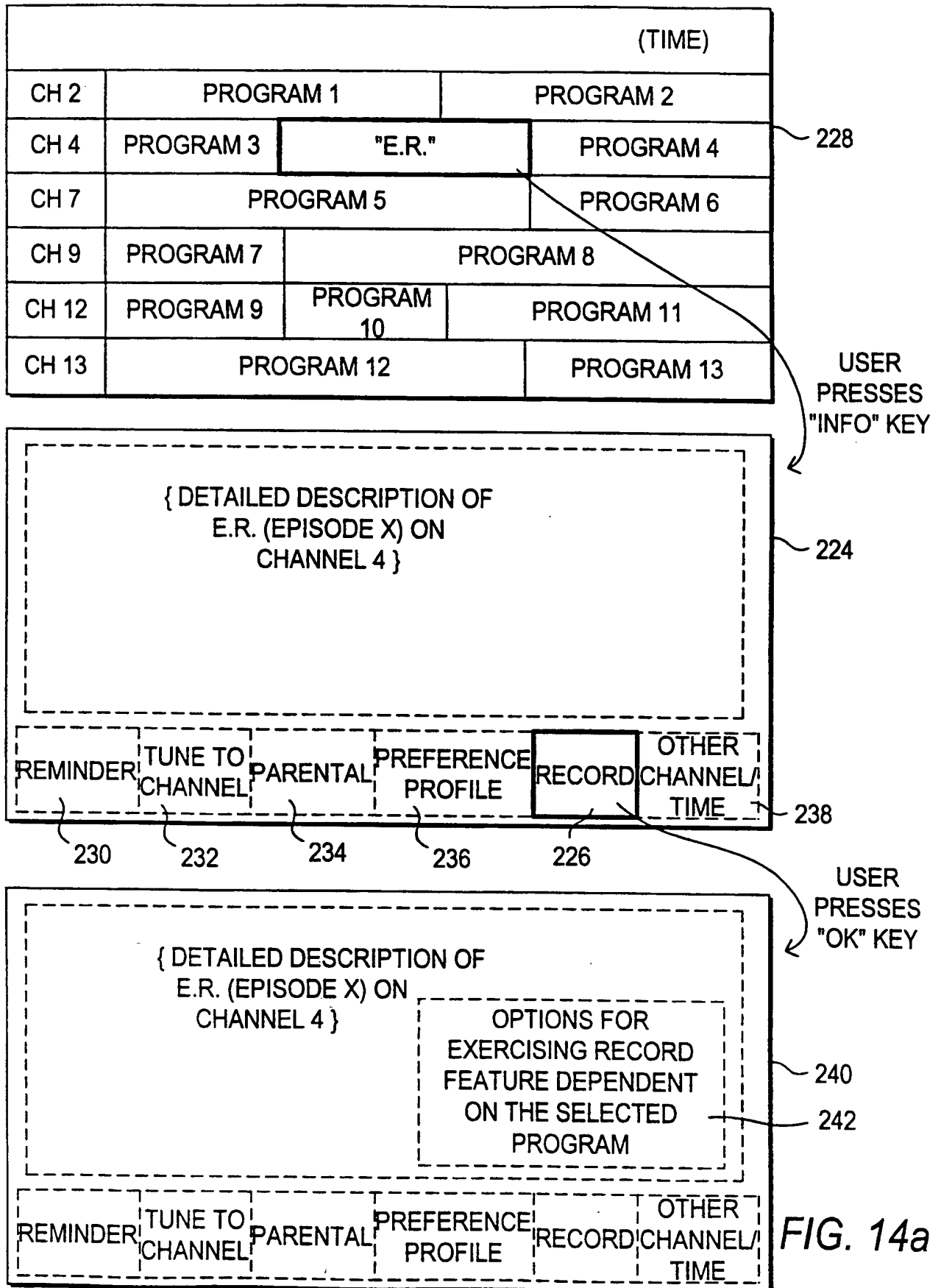


FIG. 14a

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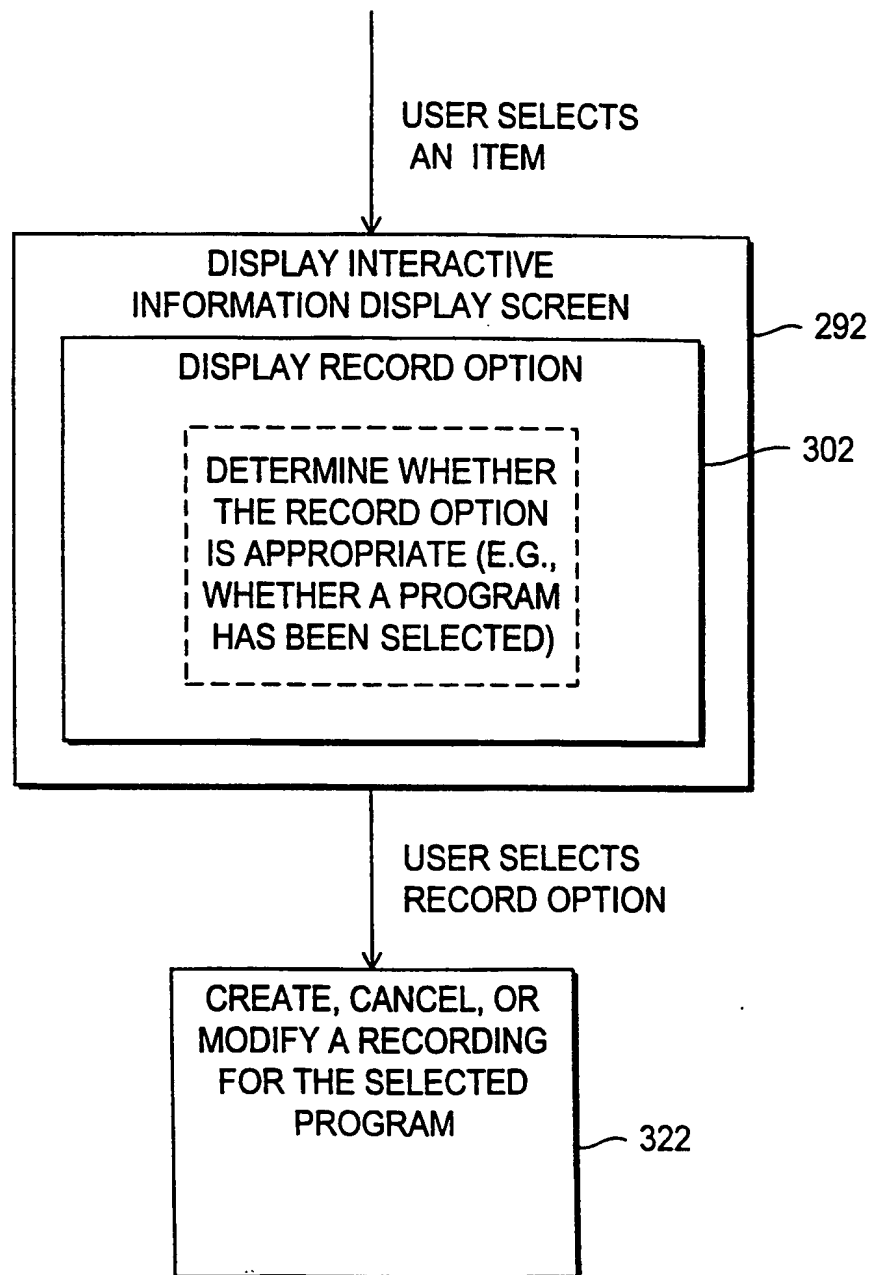


FIG. 14b

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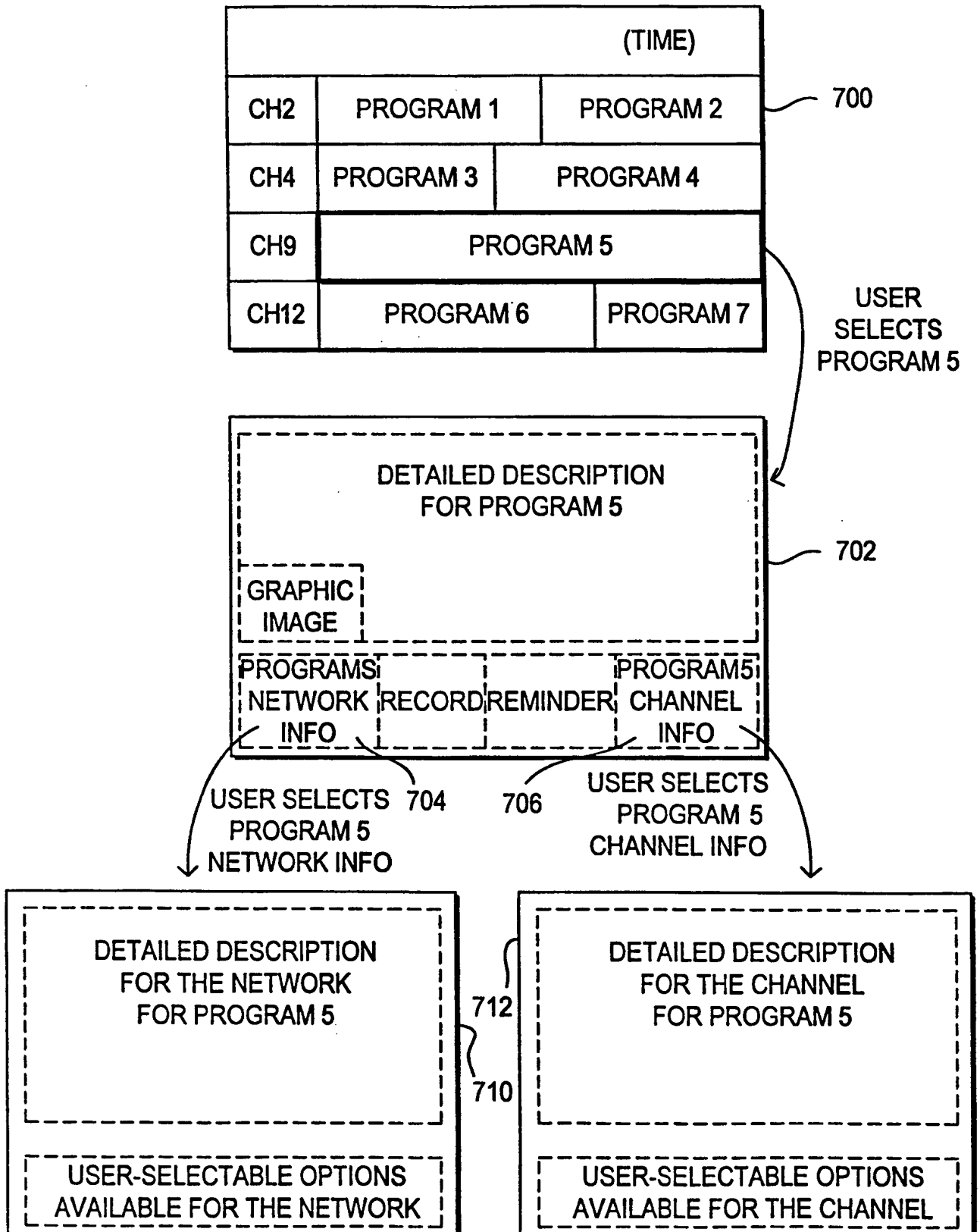


FIG. 15a

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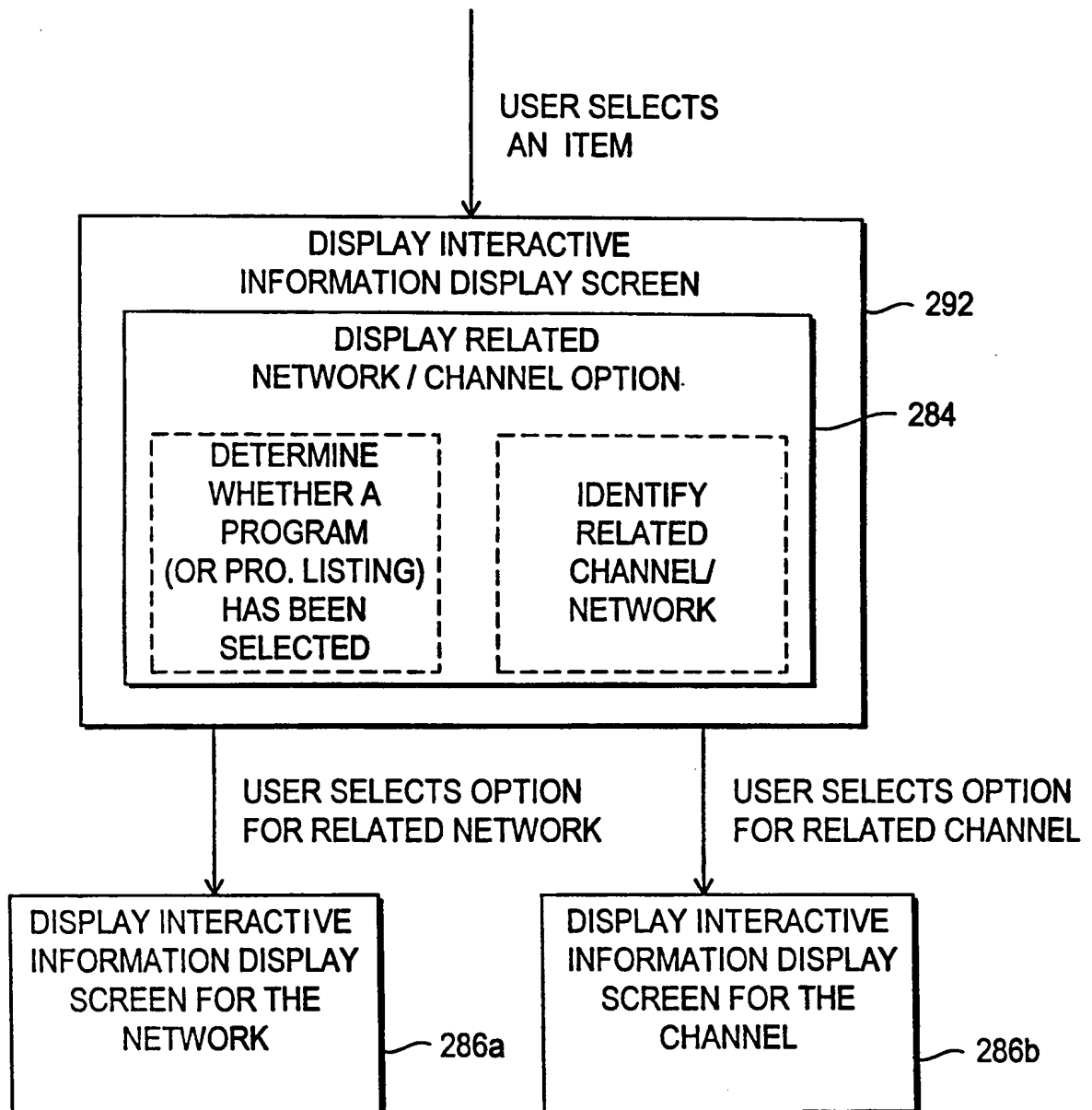
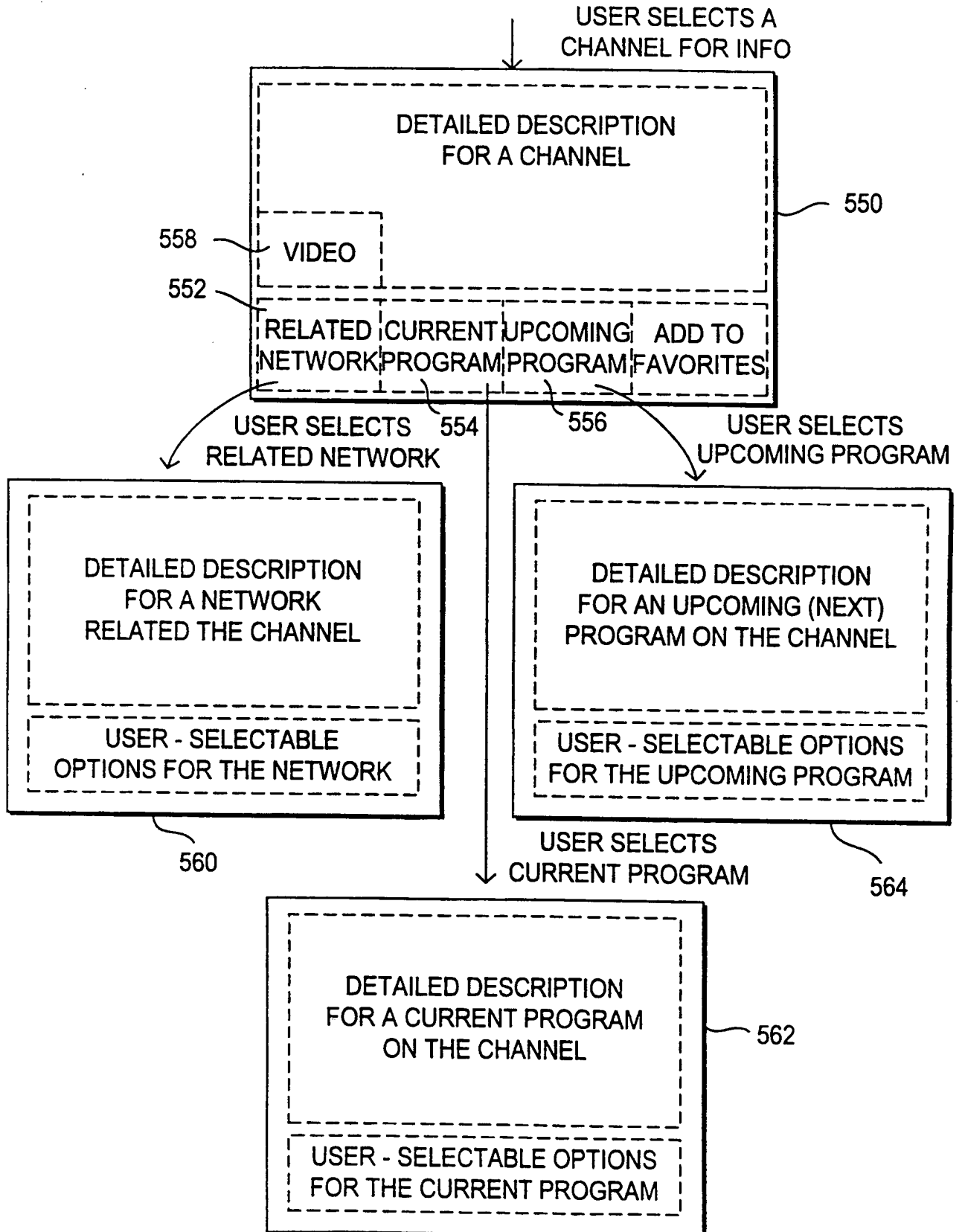


FIG. 15b

*FIG. 16a*

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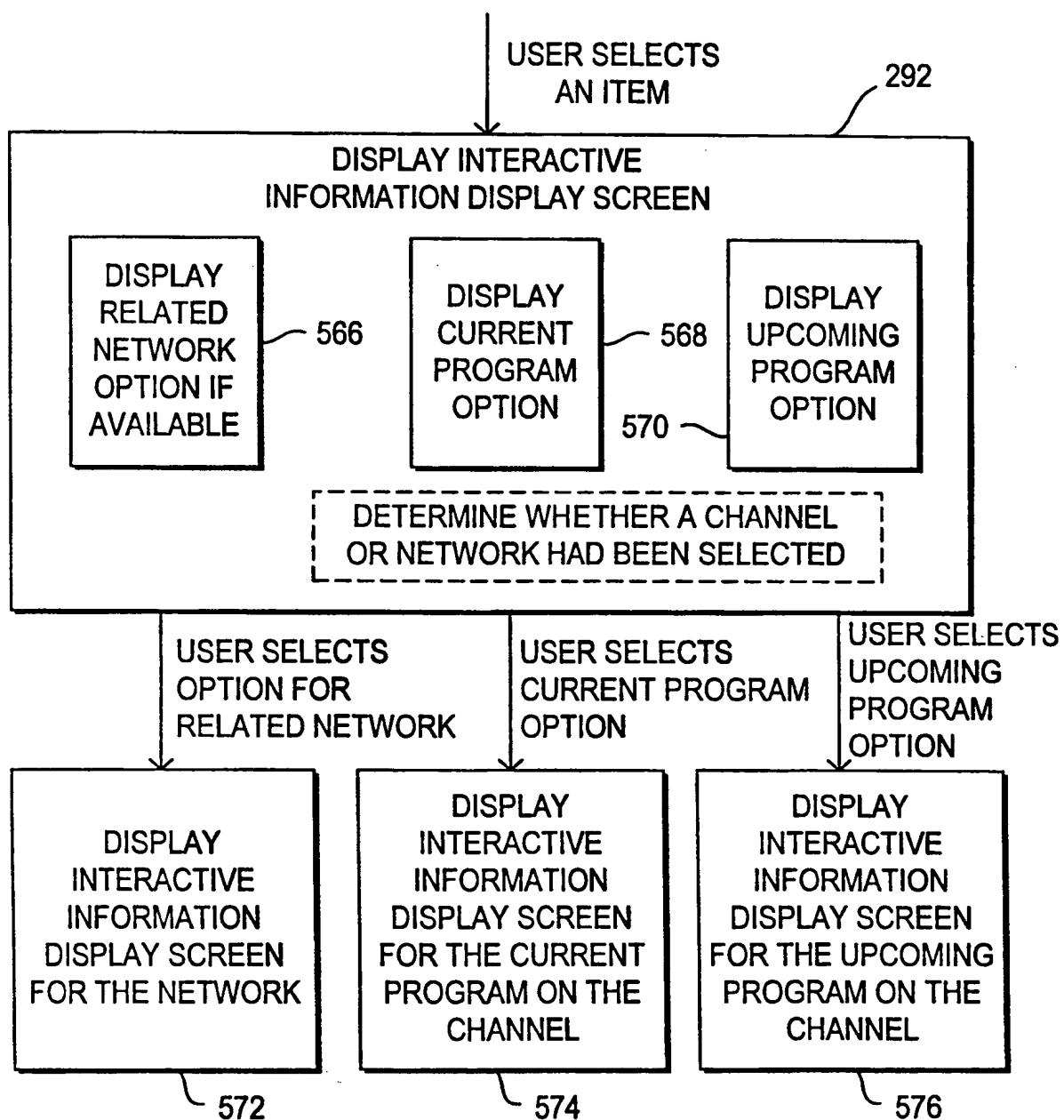


FIG. 16b

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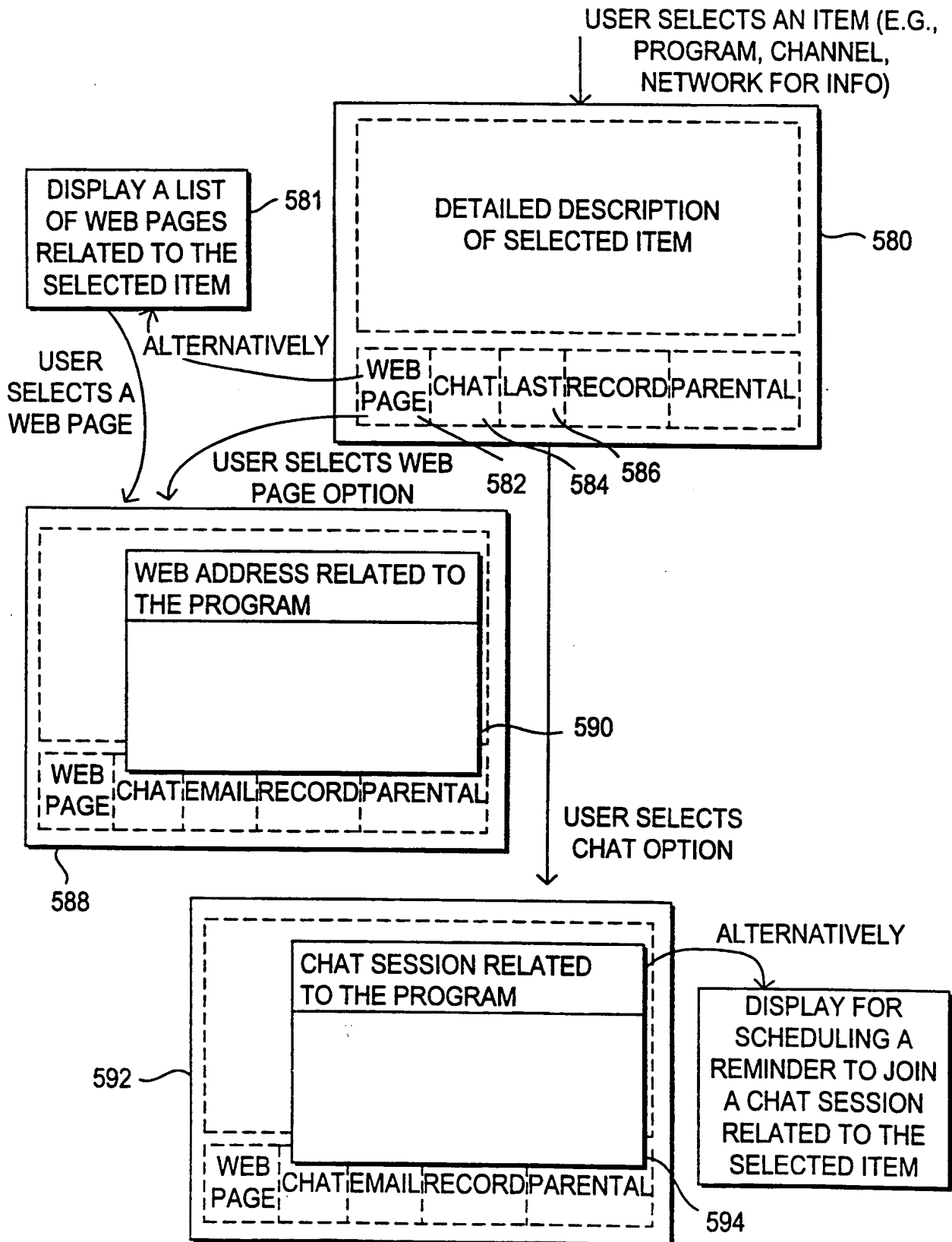


FIG. 17a

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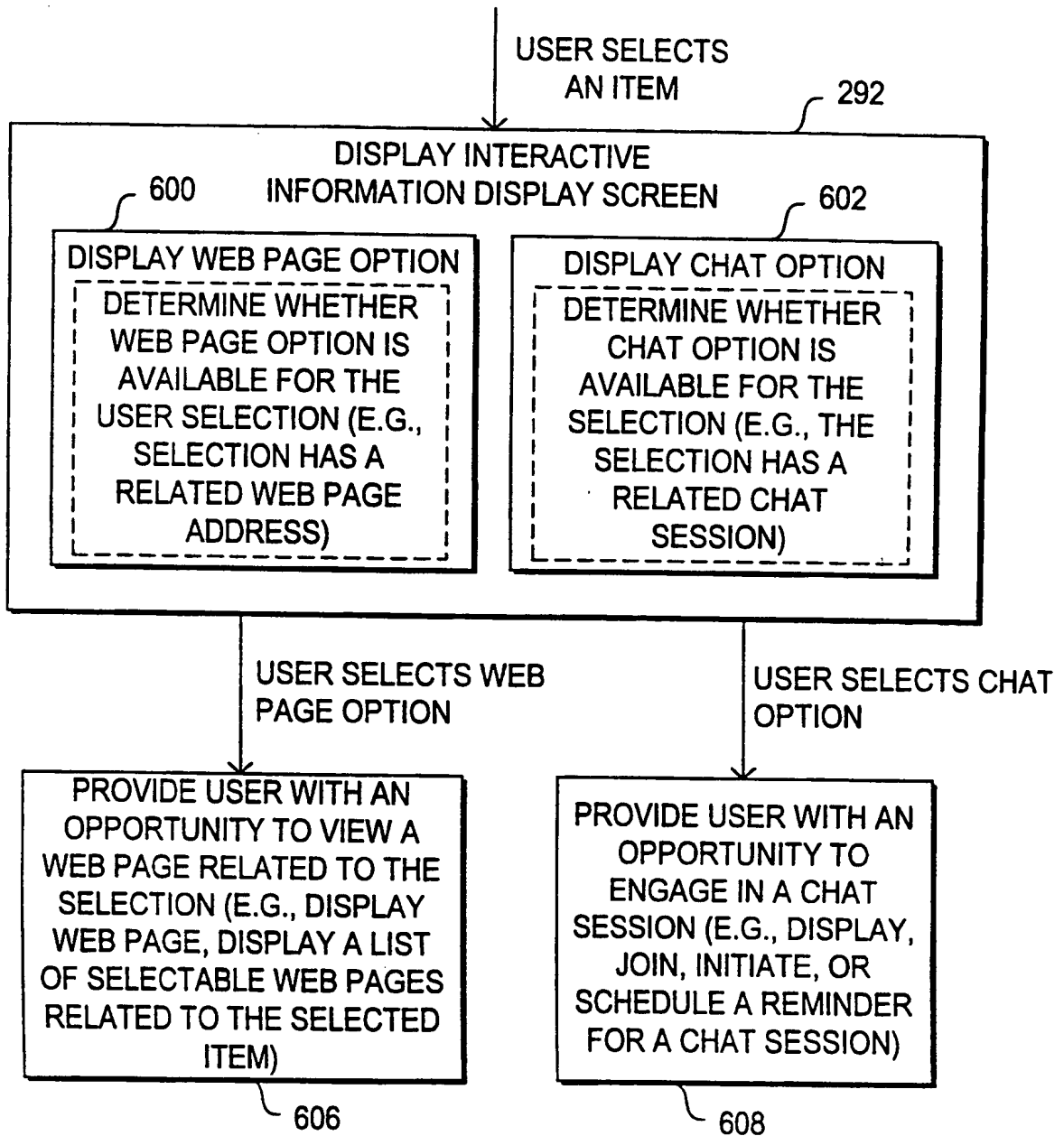


FIG. 17b

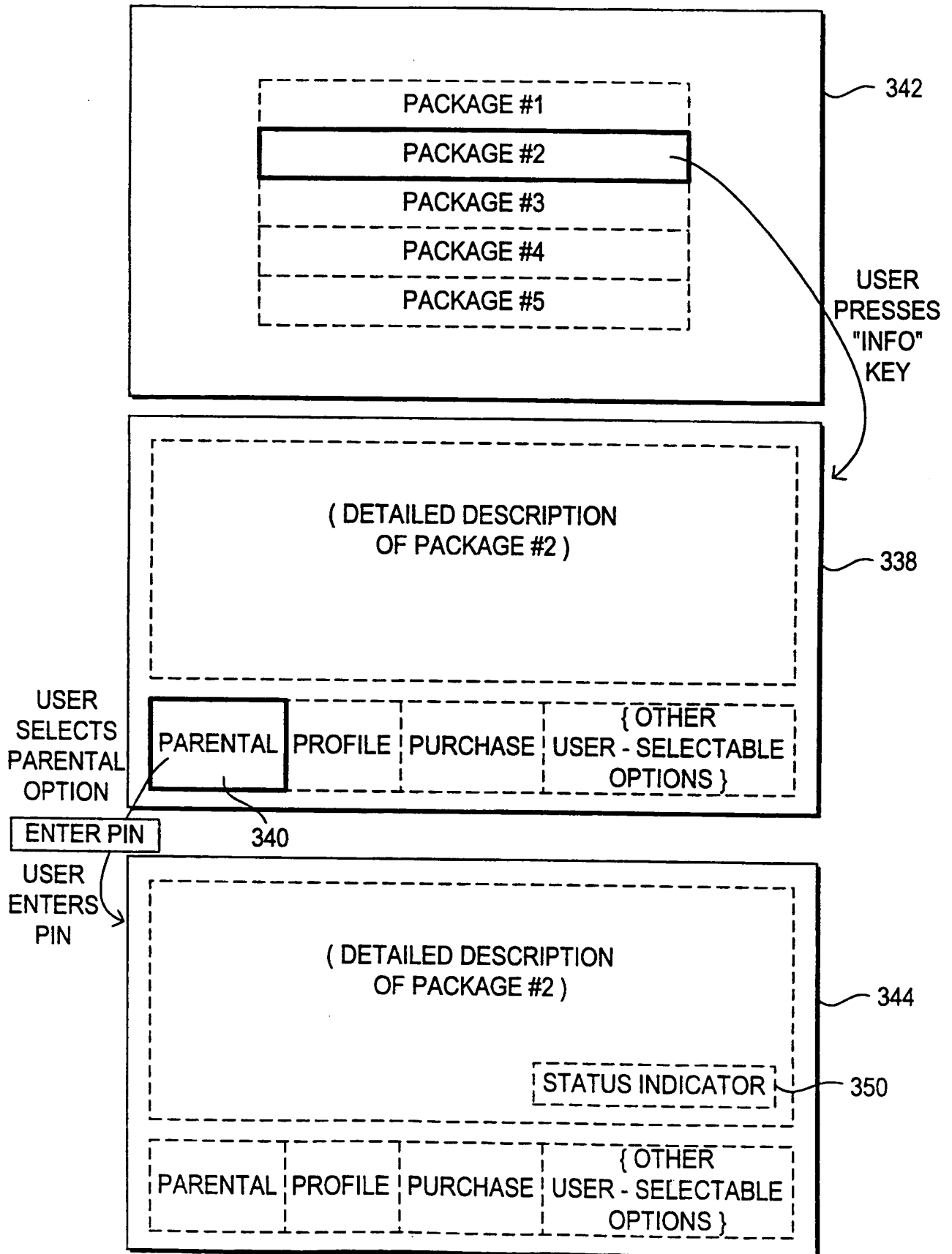


FIG. 18a

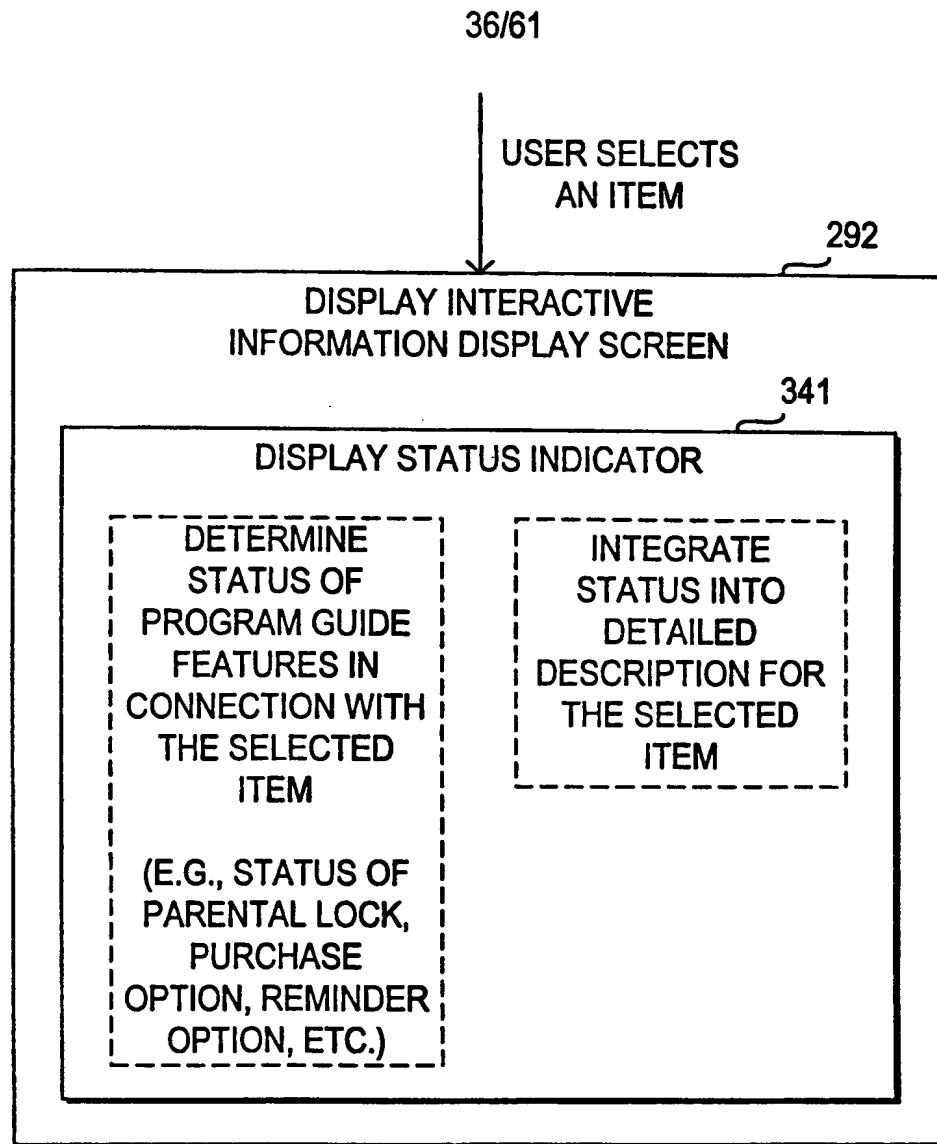


FIG. 18b

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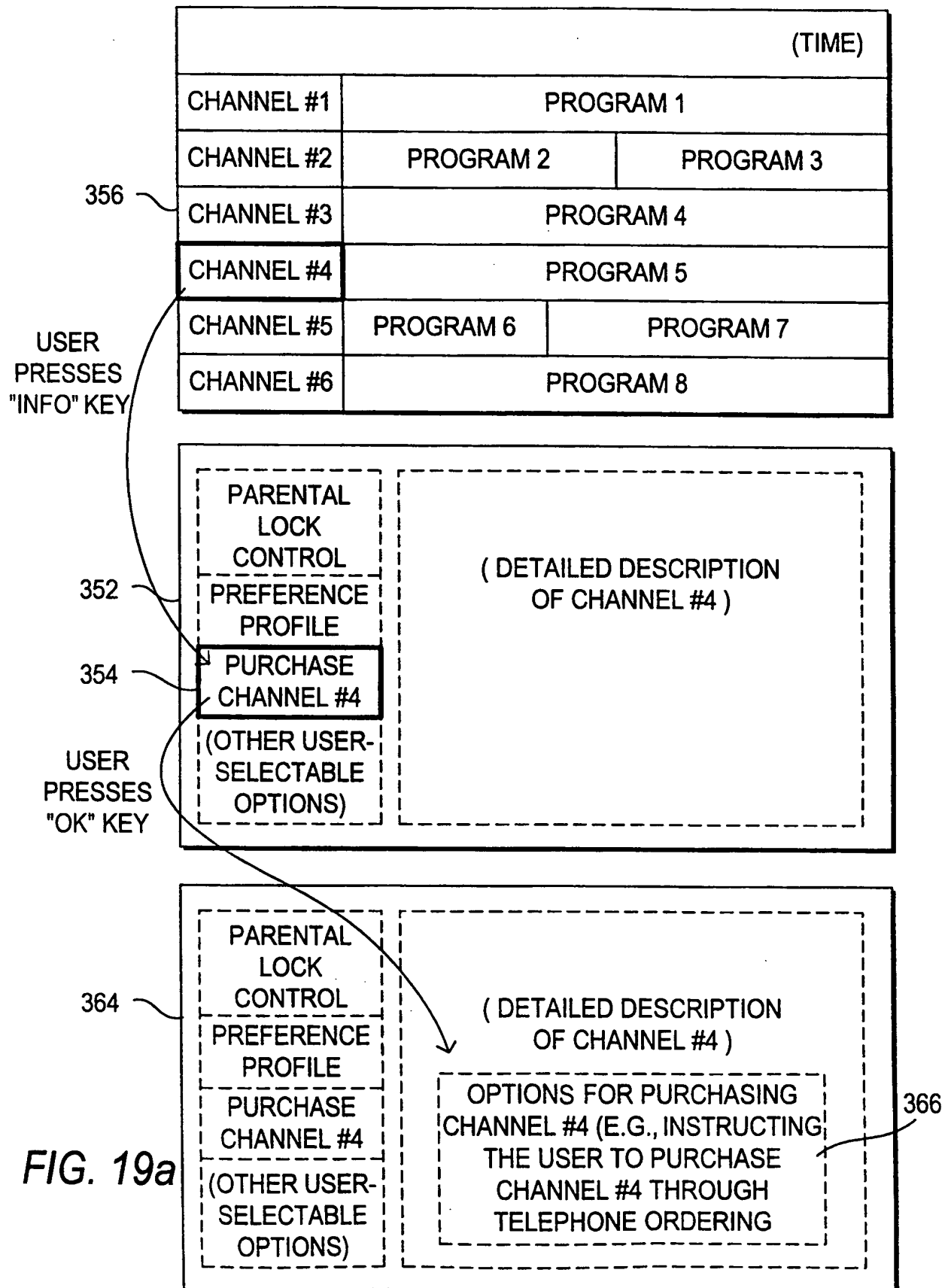
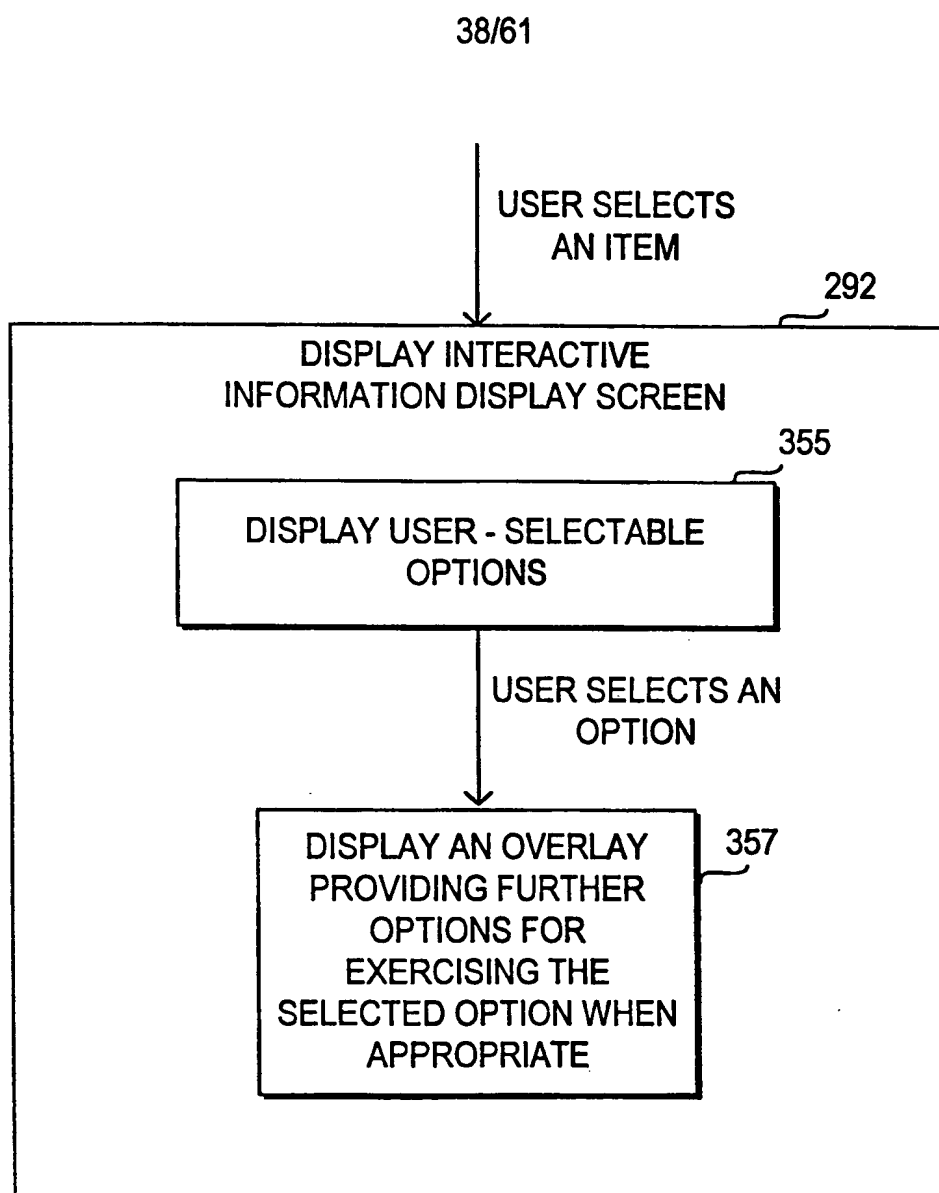


FIG. 19a

**FIG. 19b**

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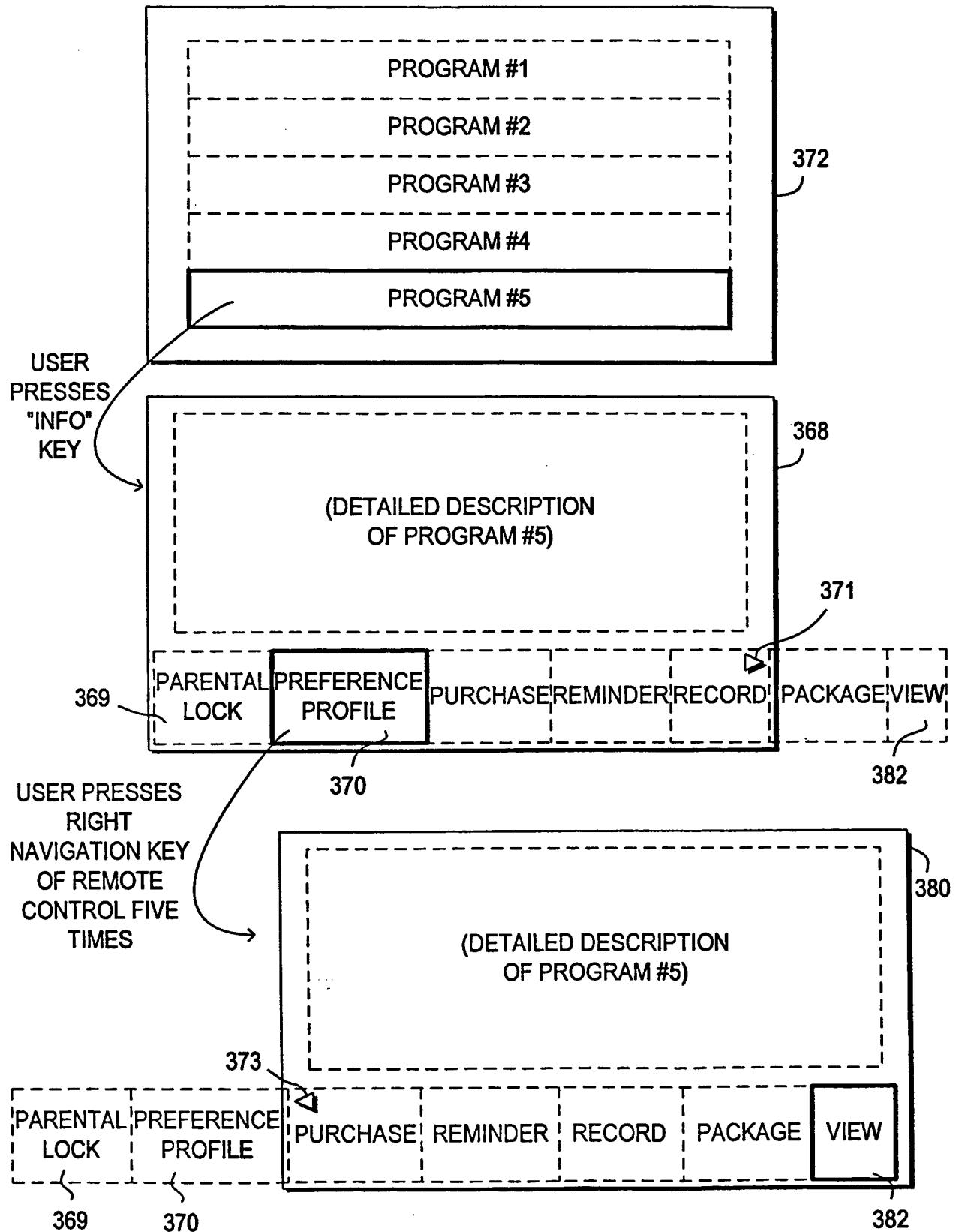


FIG. 20a

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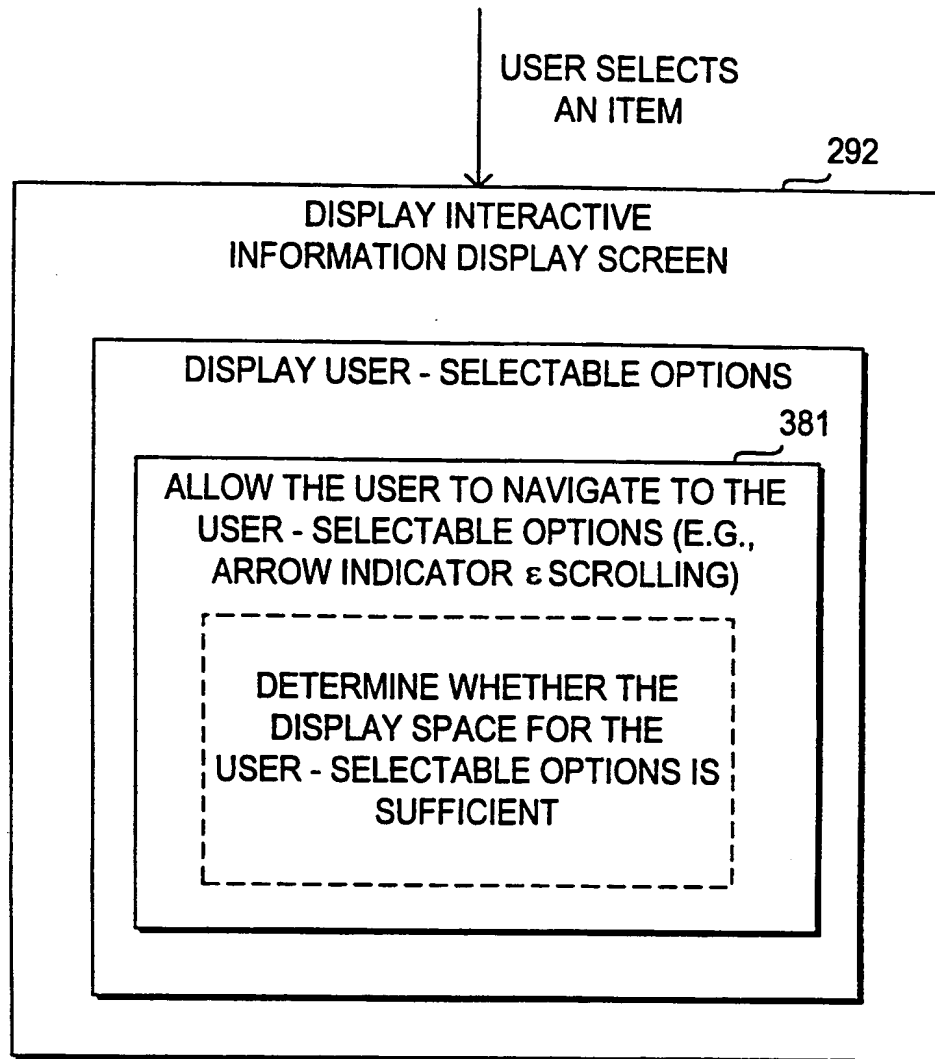


FIG. 20b

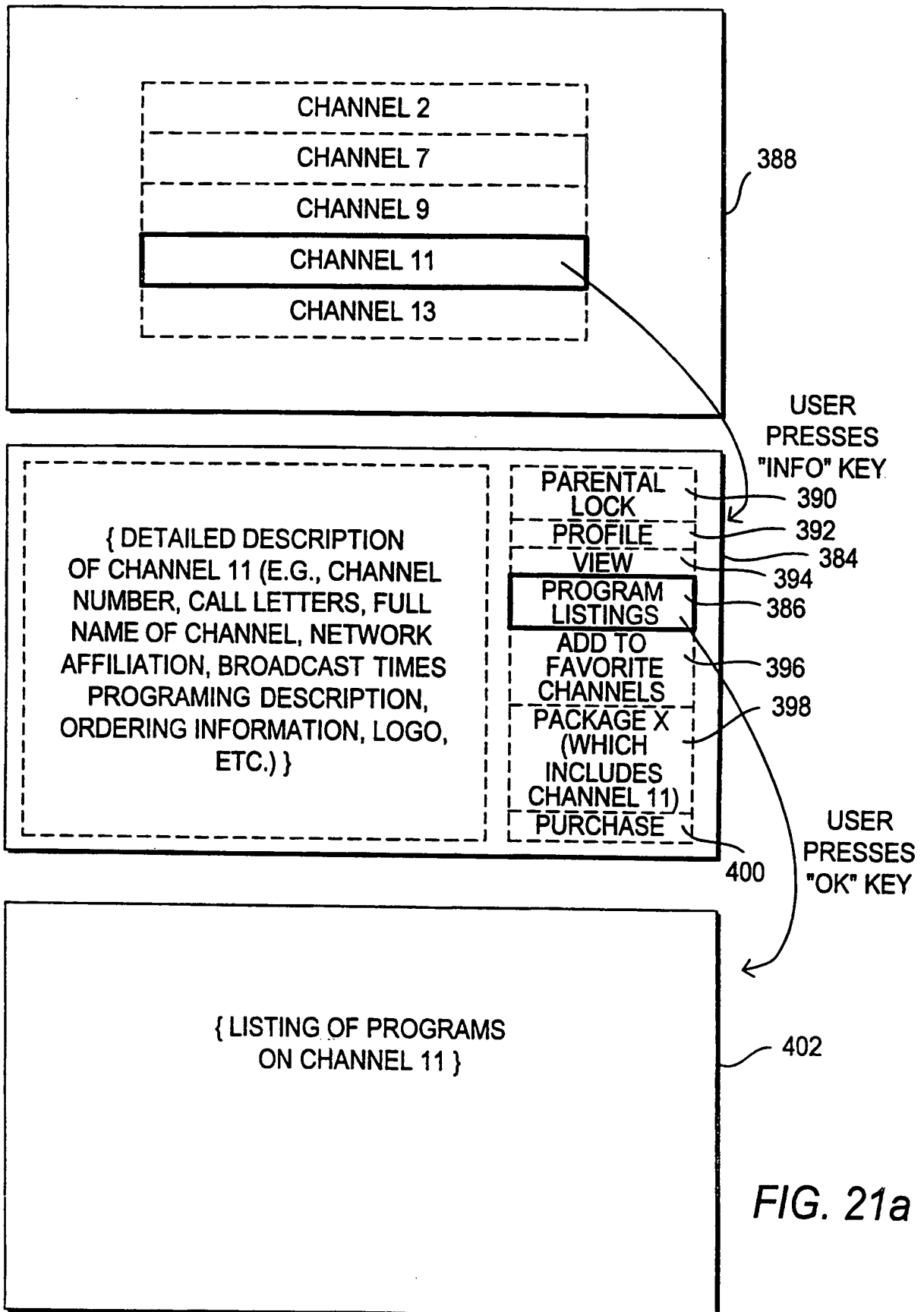


FIG. 21a

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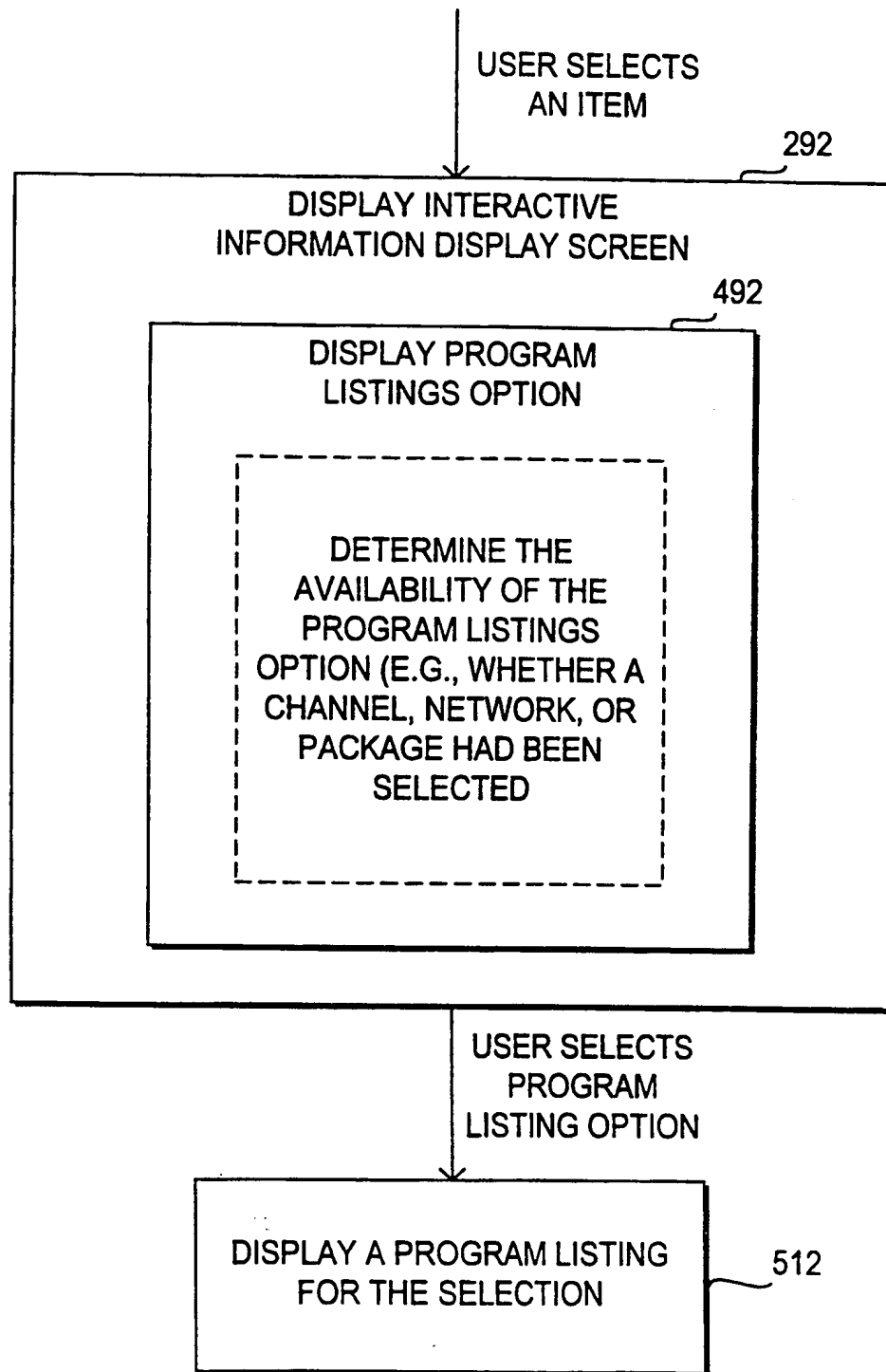


FIG. 21b

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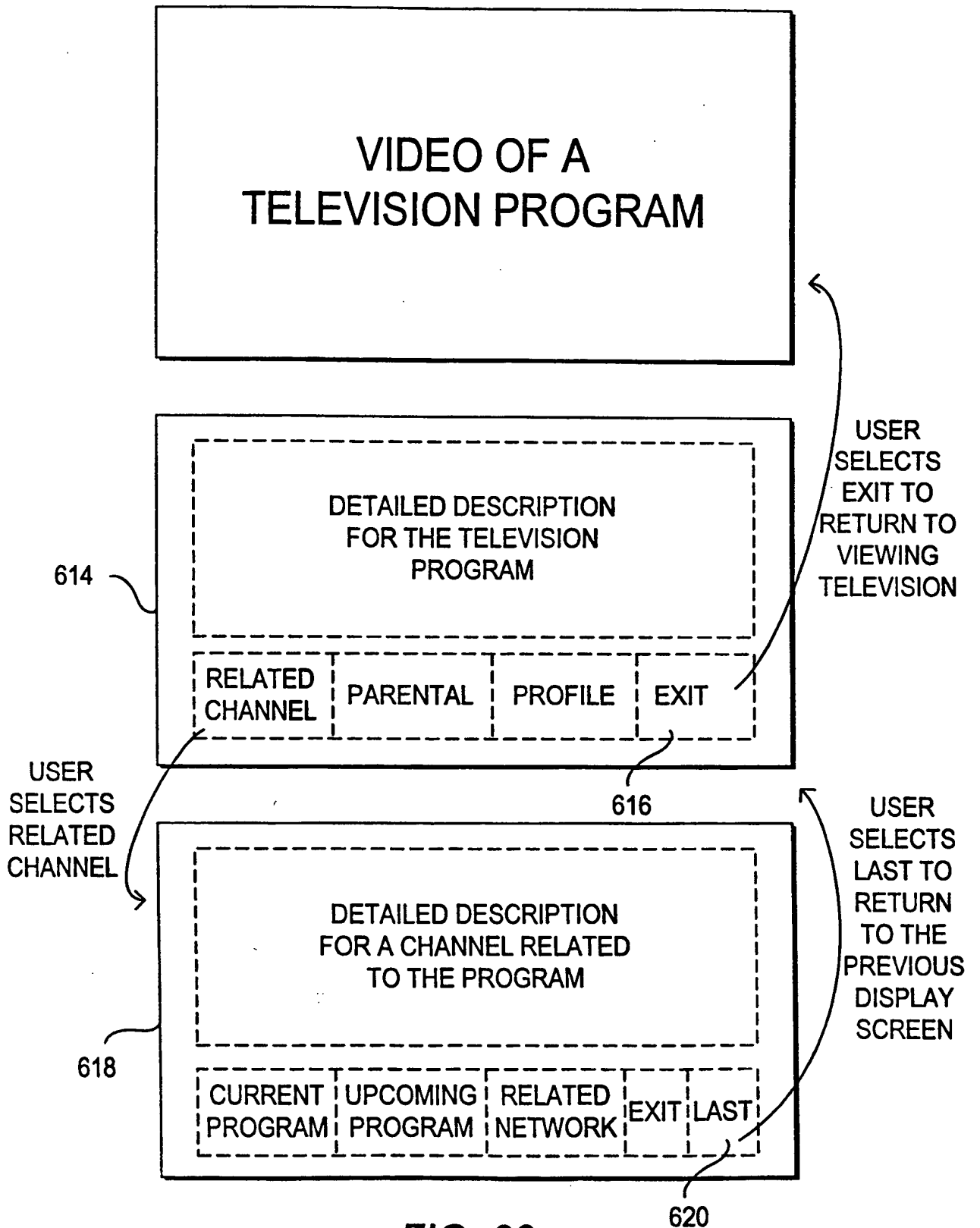


FIG. 22a

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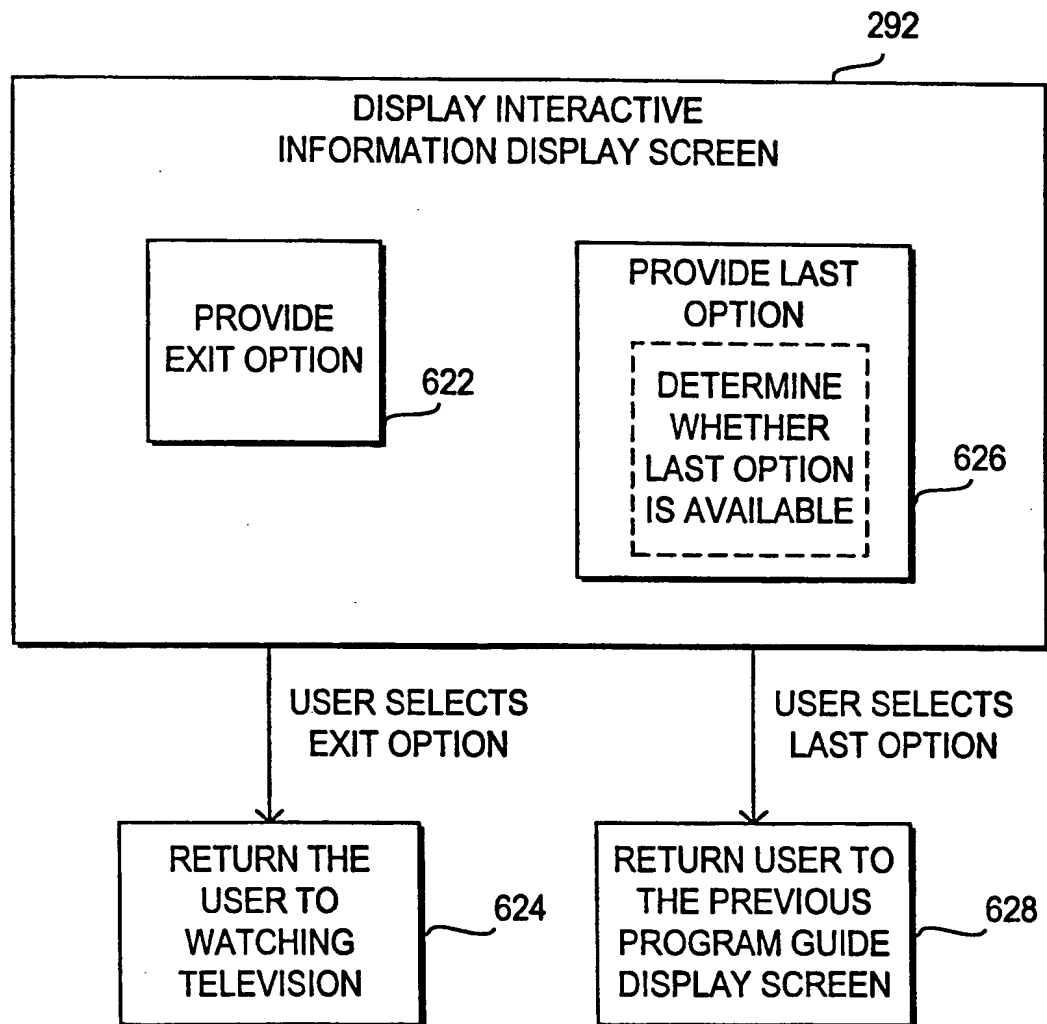


FIG. 22b

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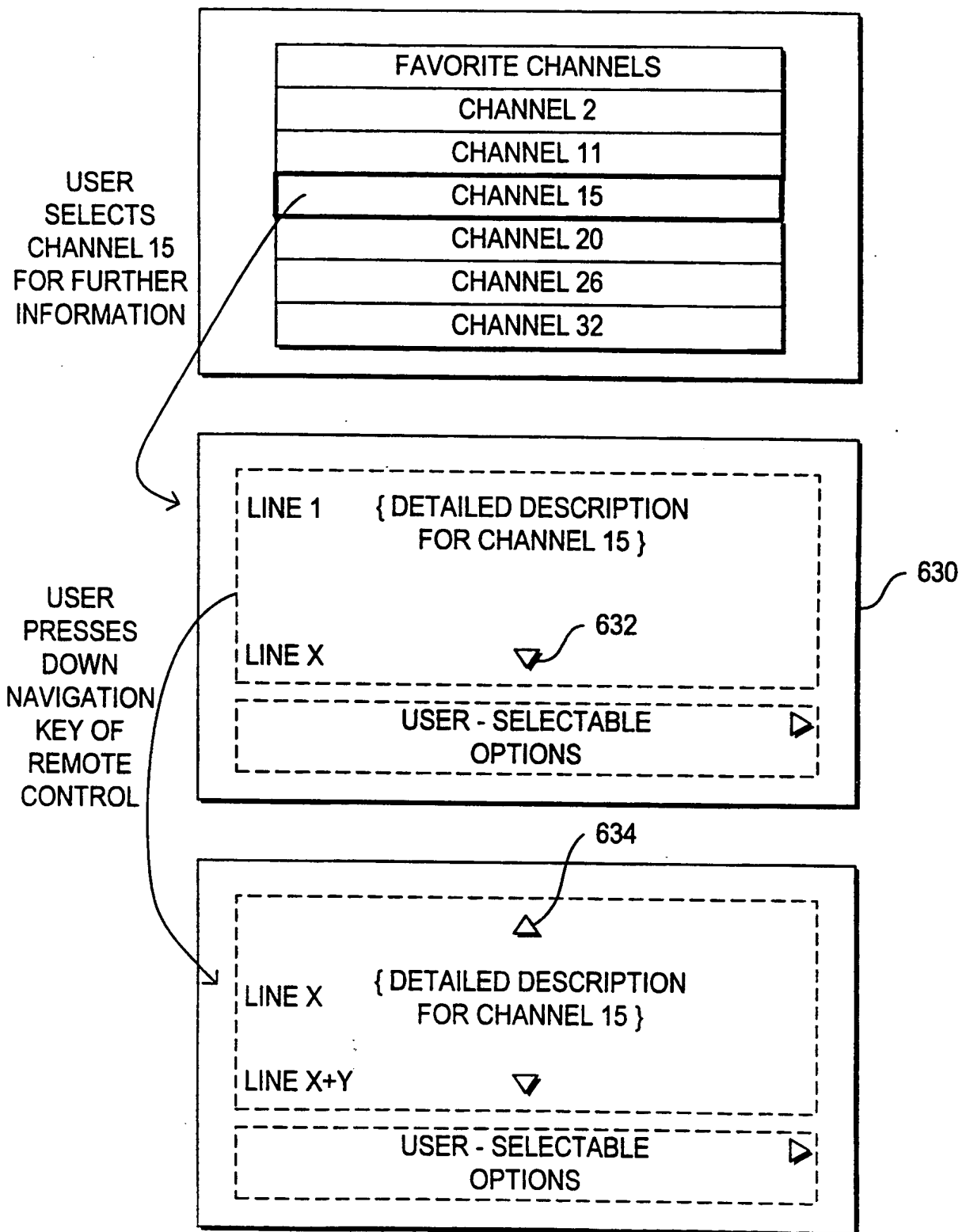


FIG. 23a

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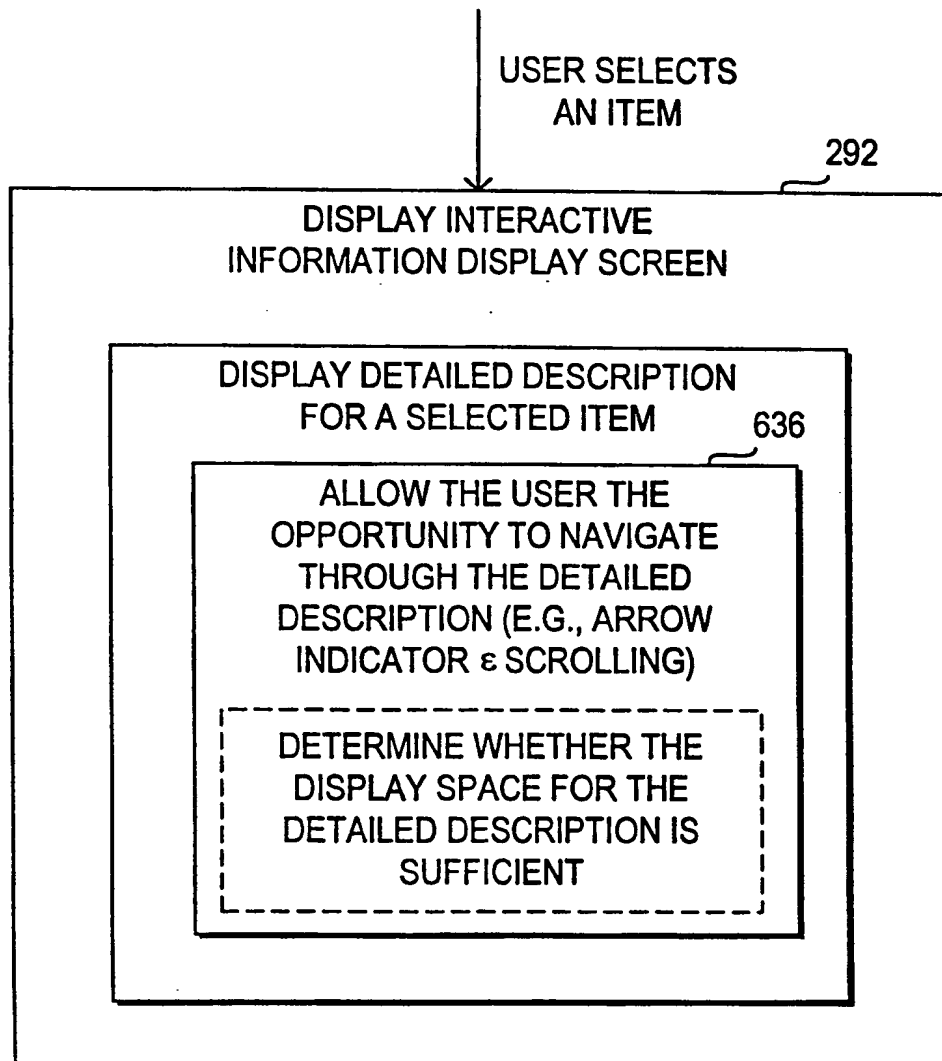


FIG. 23b

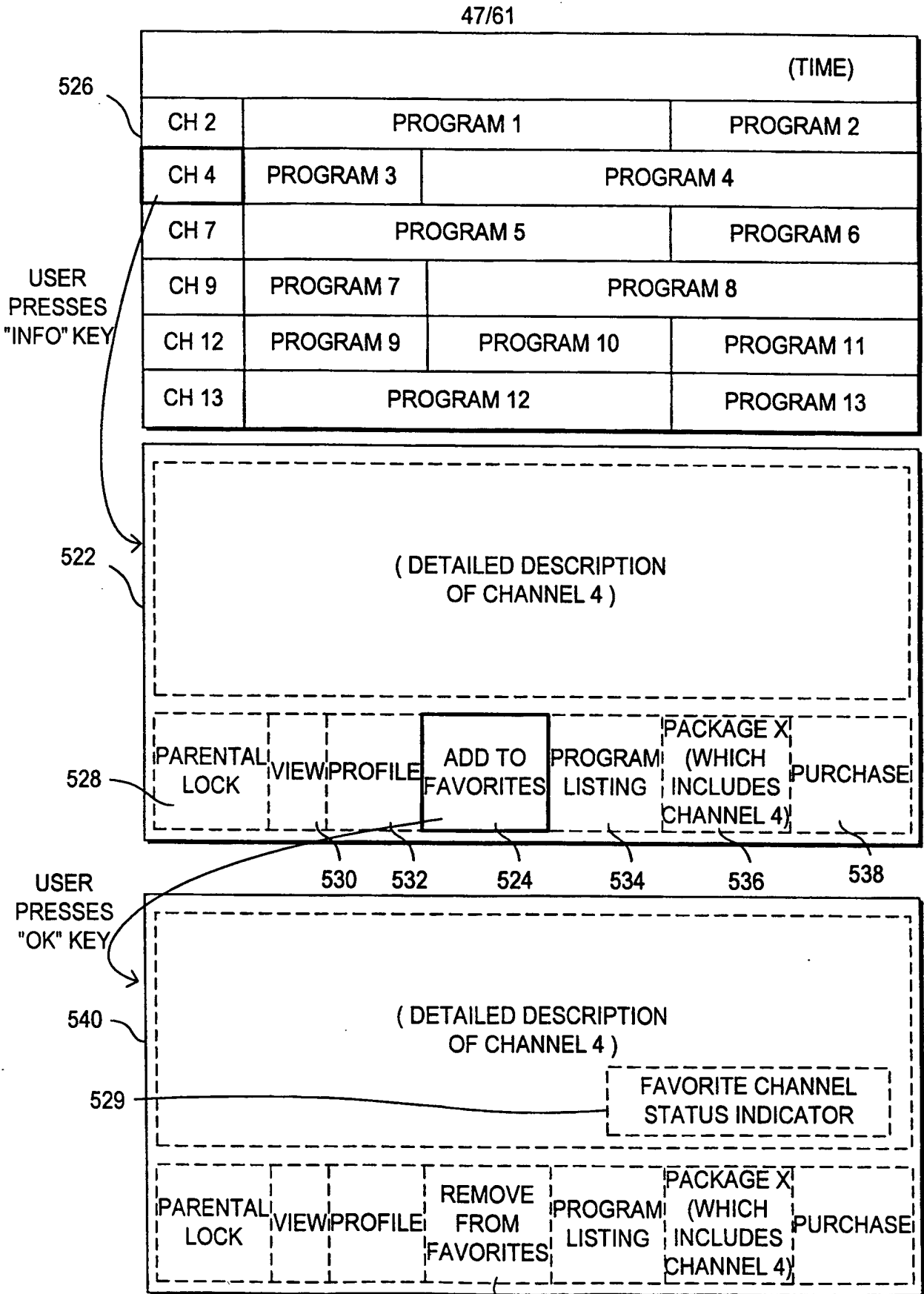


FIG. 24a

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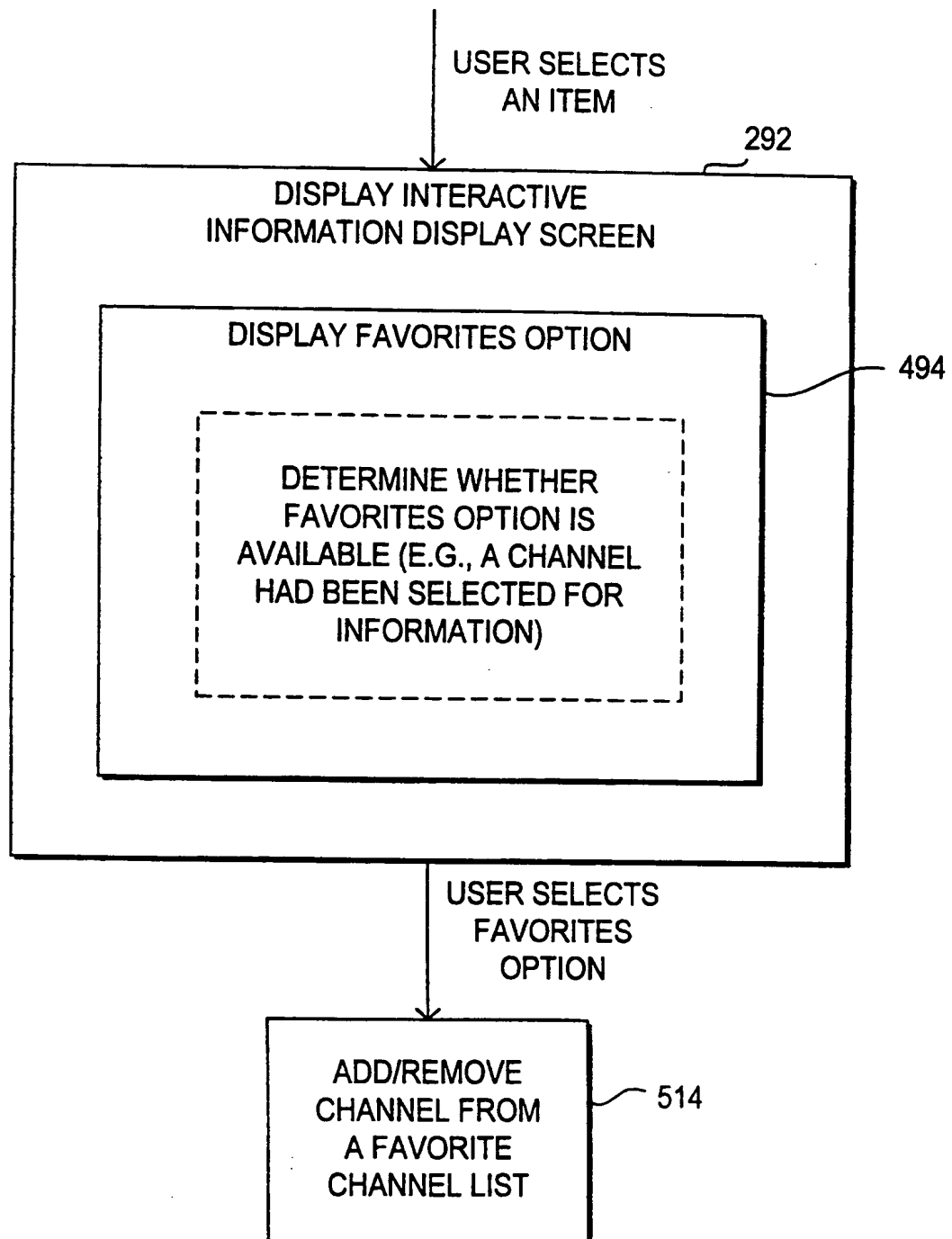


FIG. 24b

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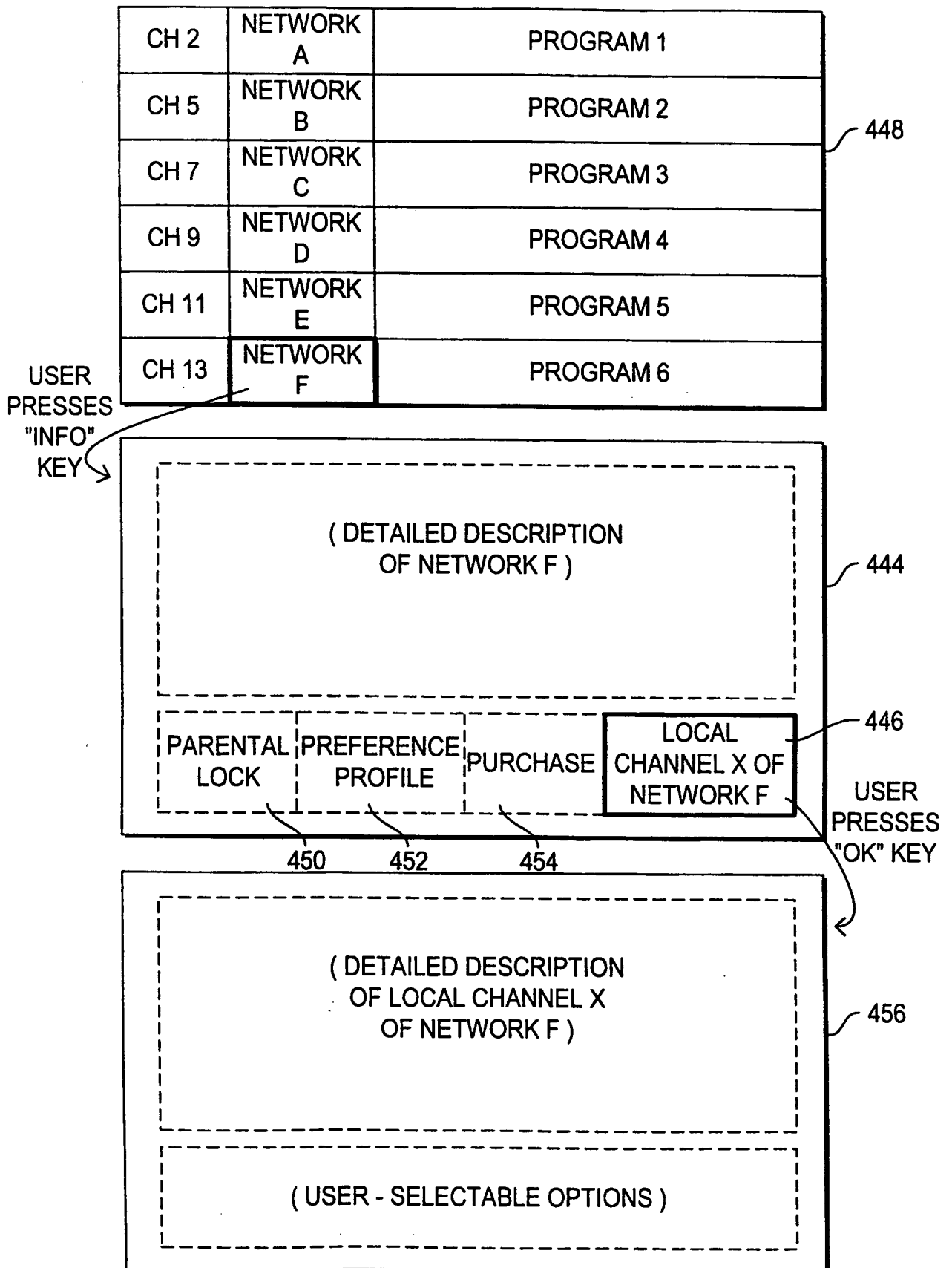


FIG. 25a
SUBSTITUTE SHEET (RULE 26)

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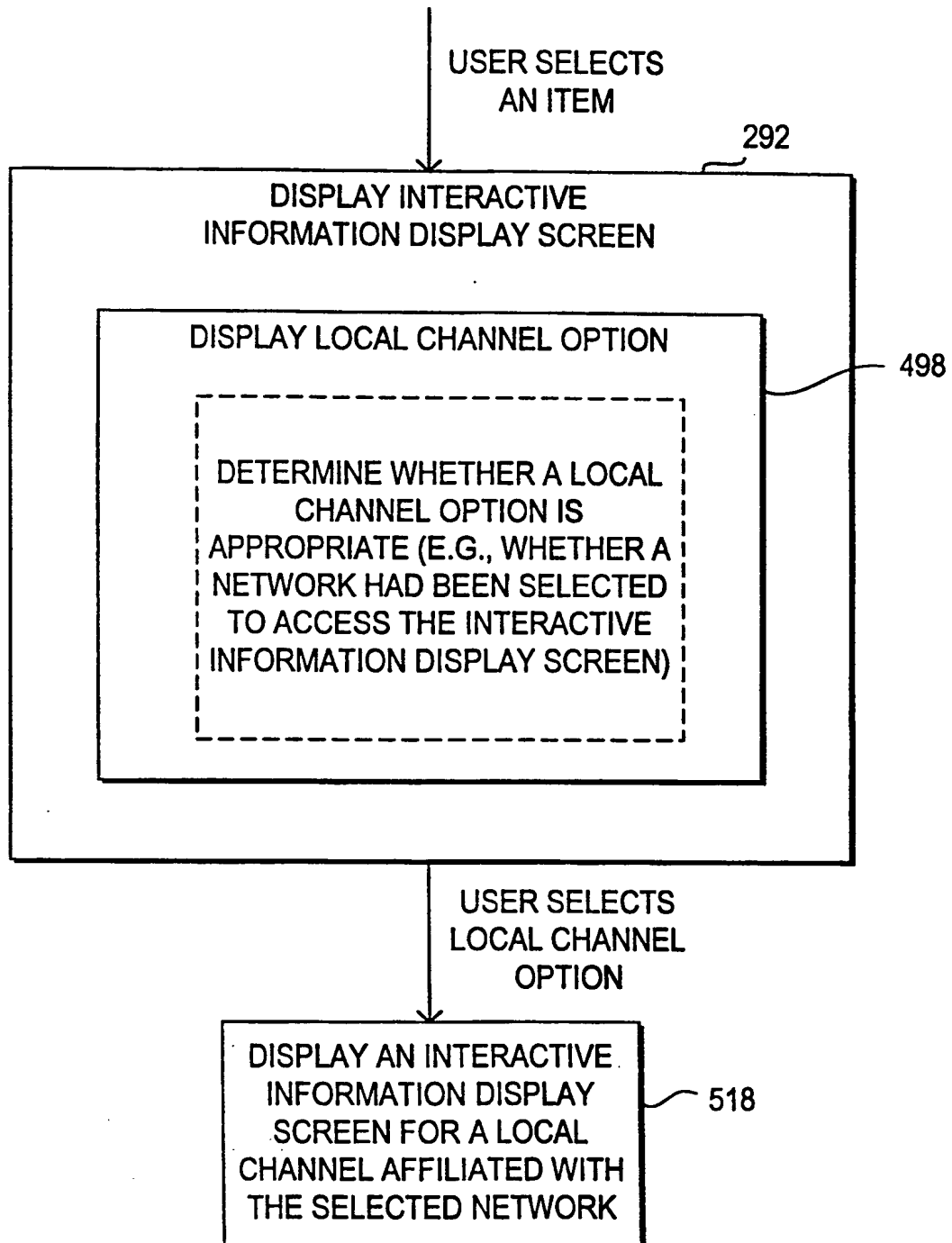


FIG. 25b

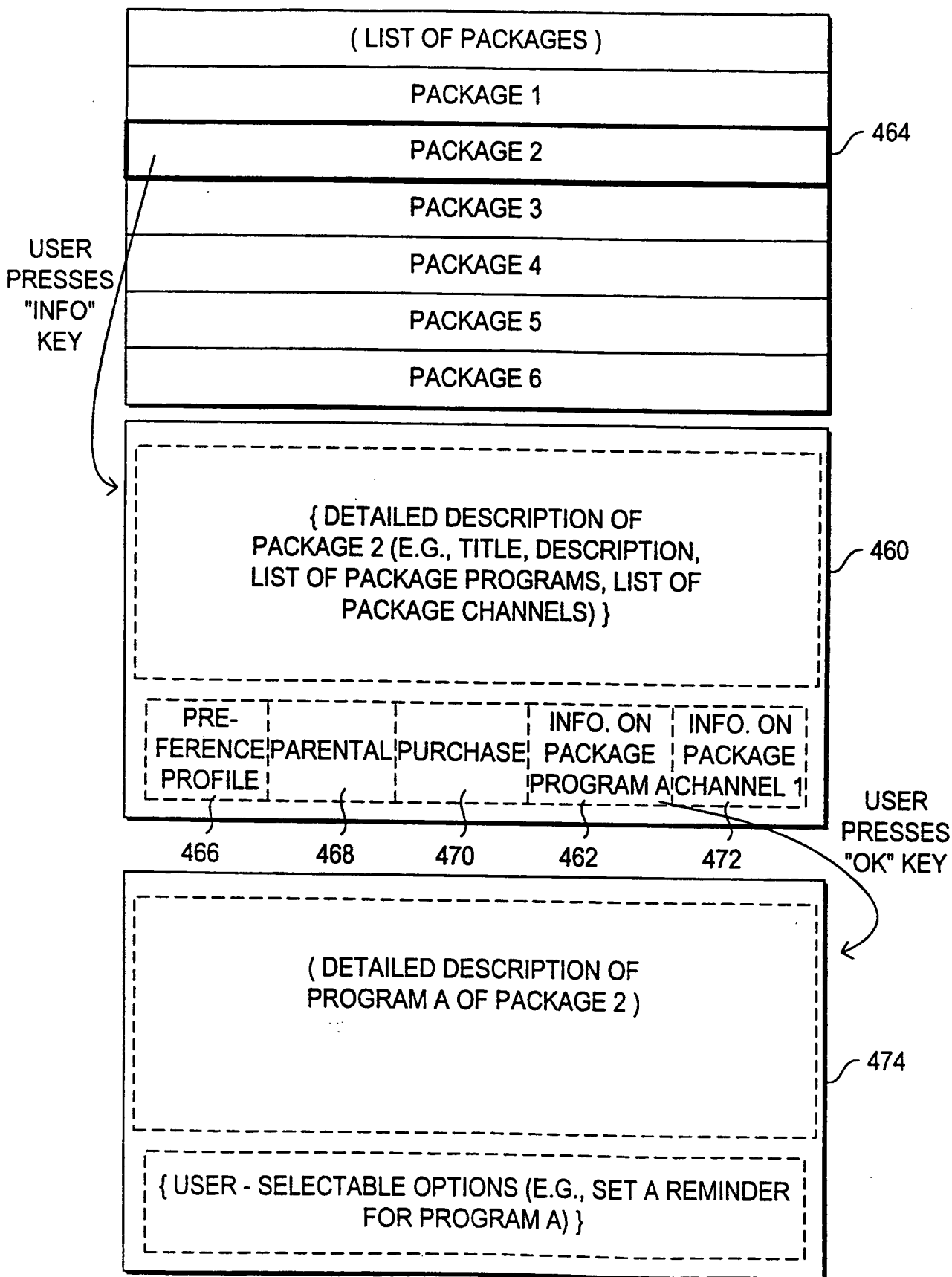


FIG. 26a

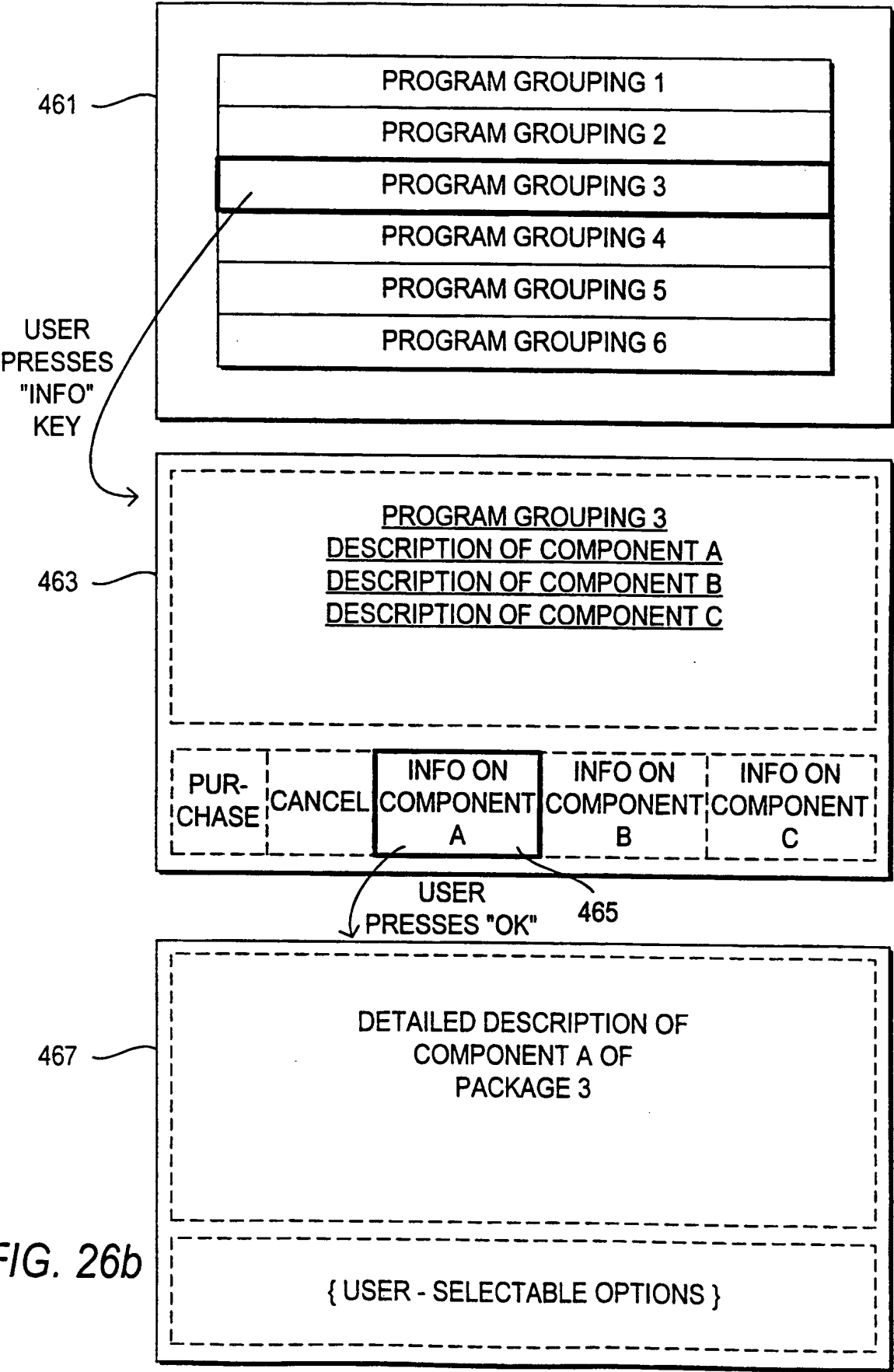


FIG. 26b

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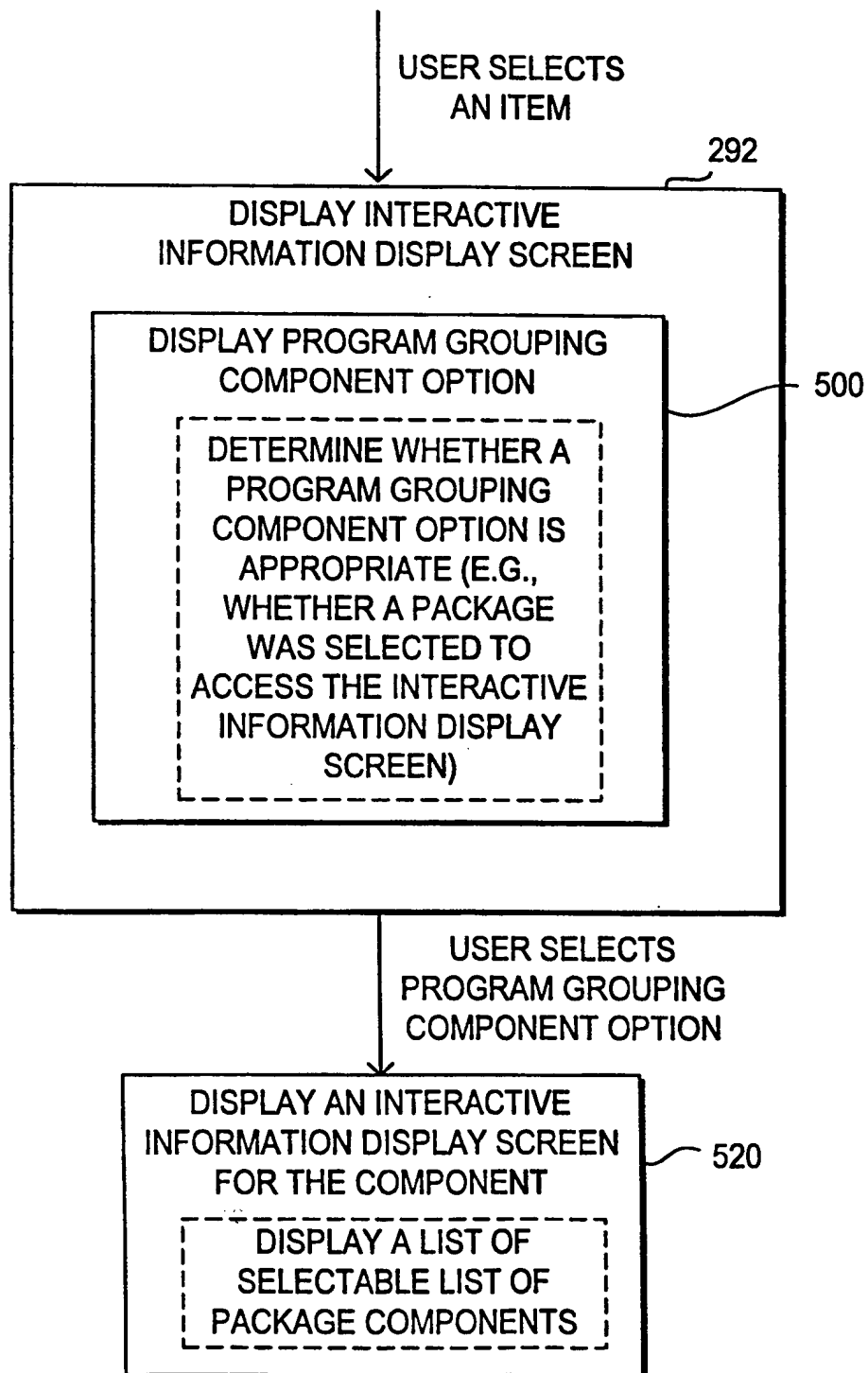


FIG. 26c

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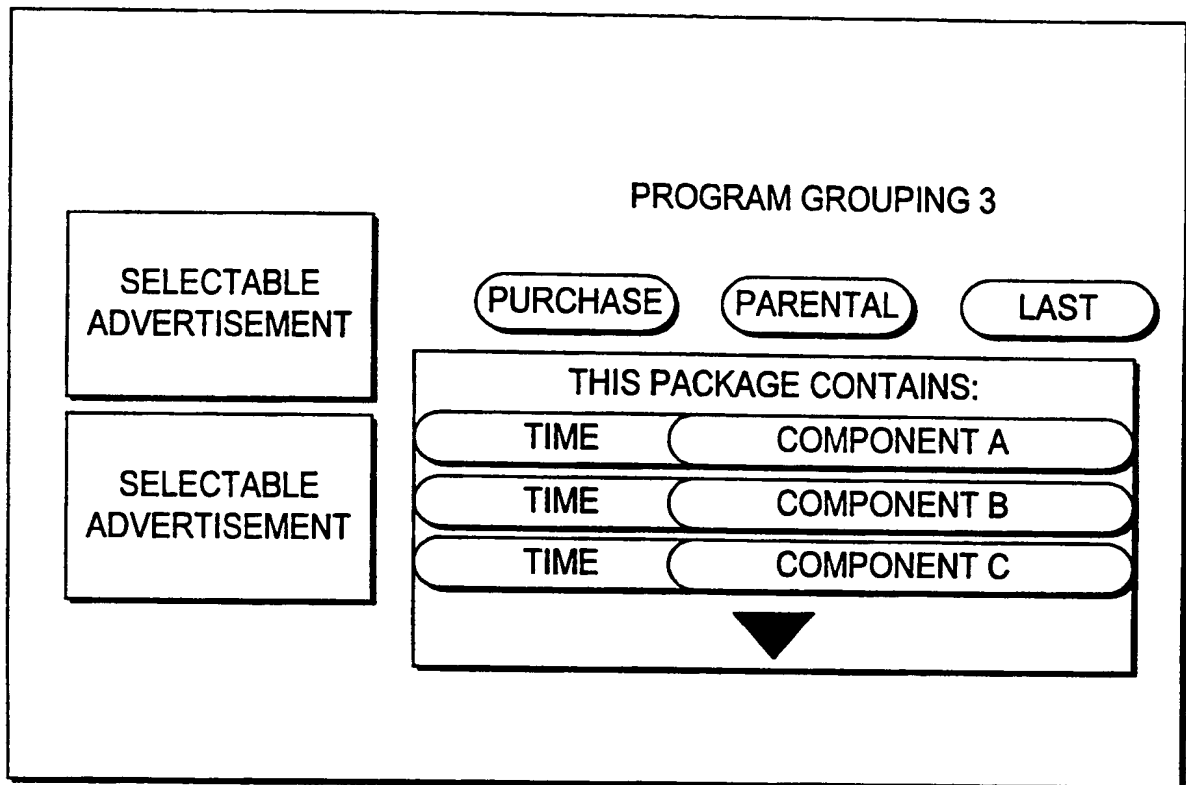


FIG. 26d

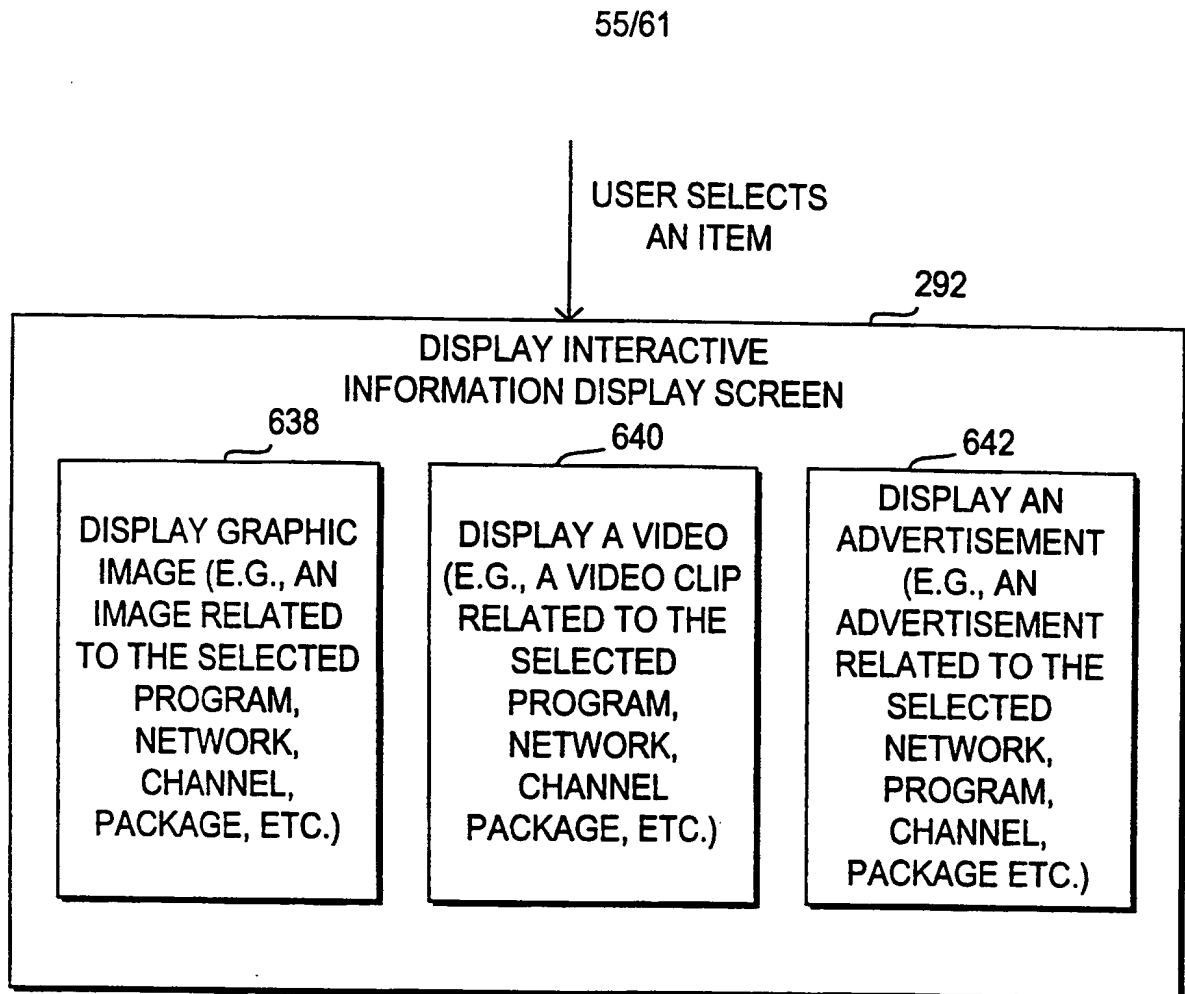


FIG. 27

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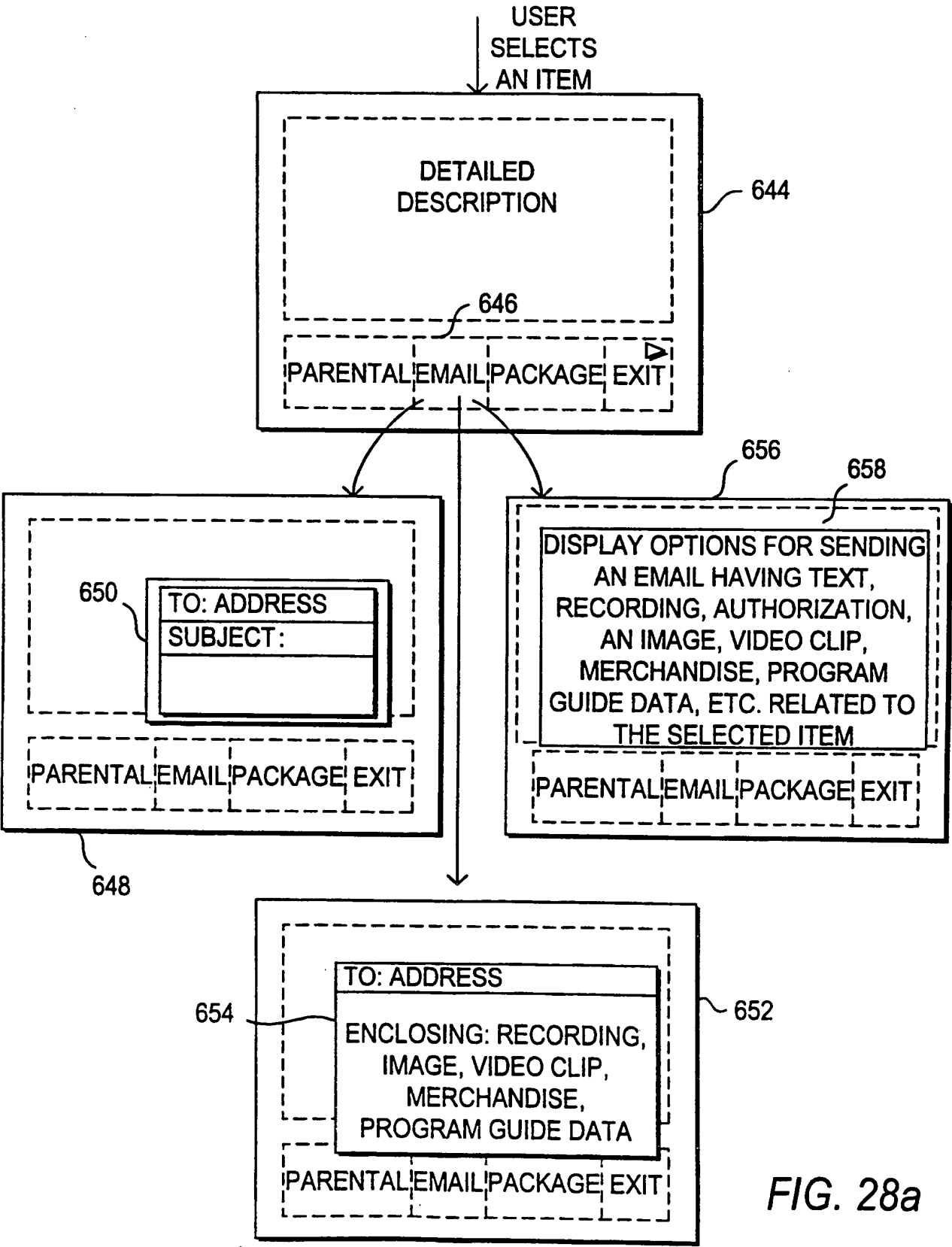


FIG. 28a

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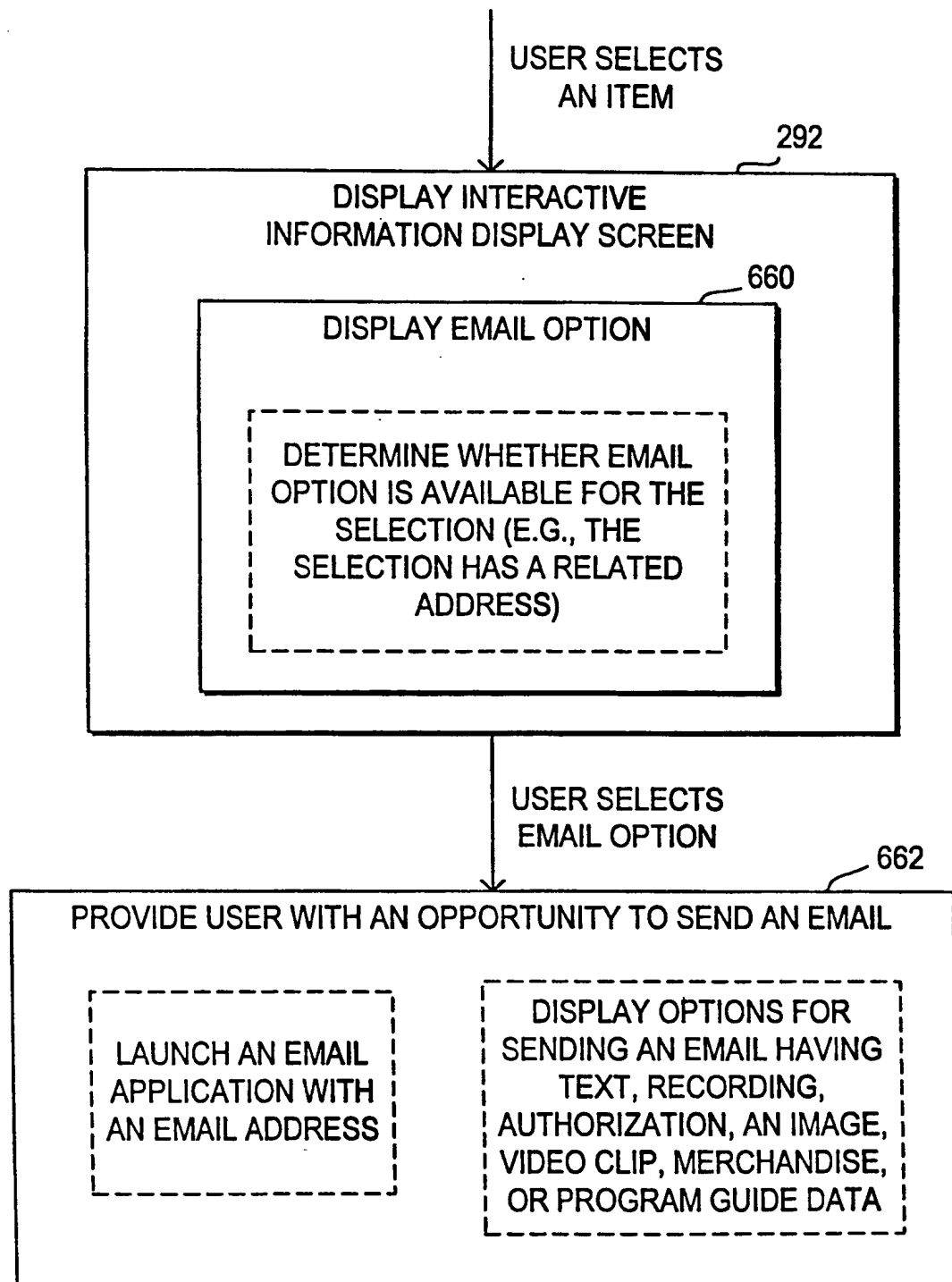


FIG. 28b

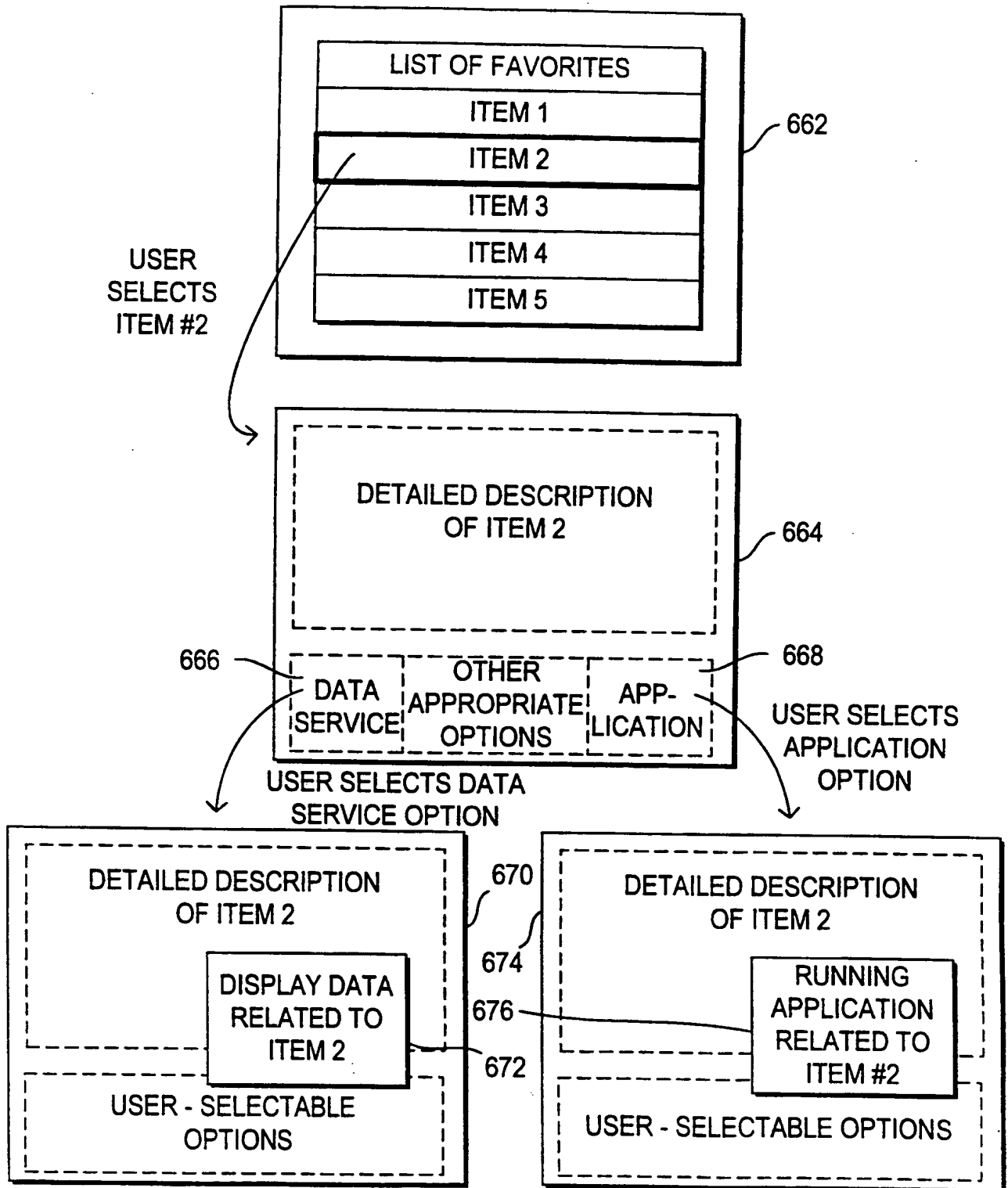


FIG. 29a

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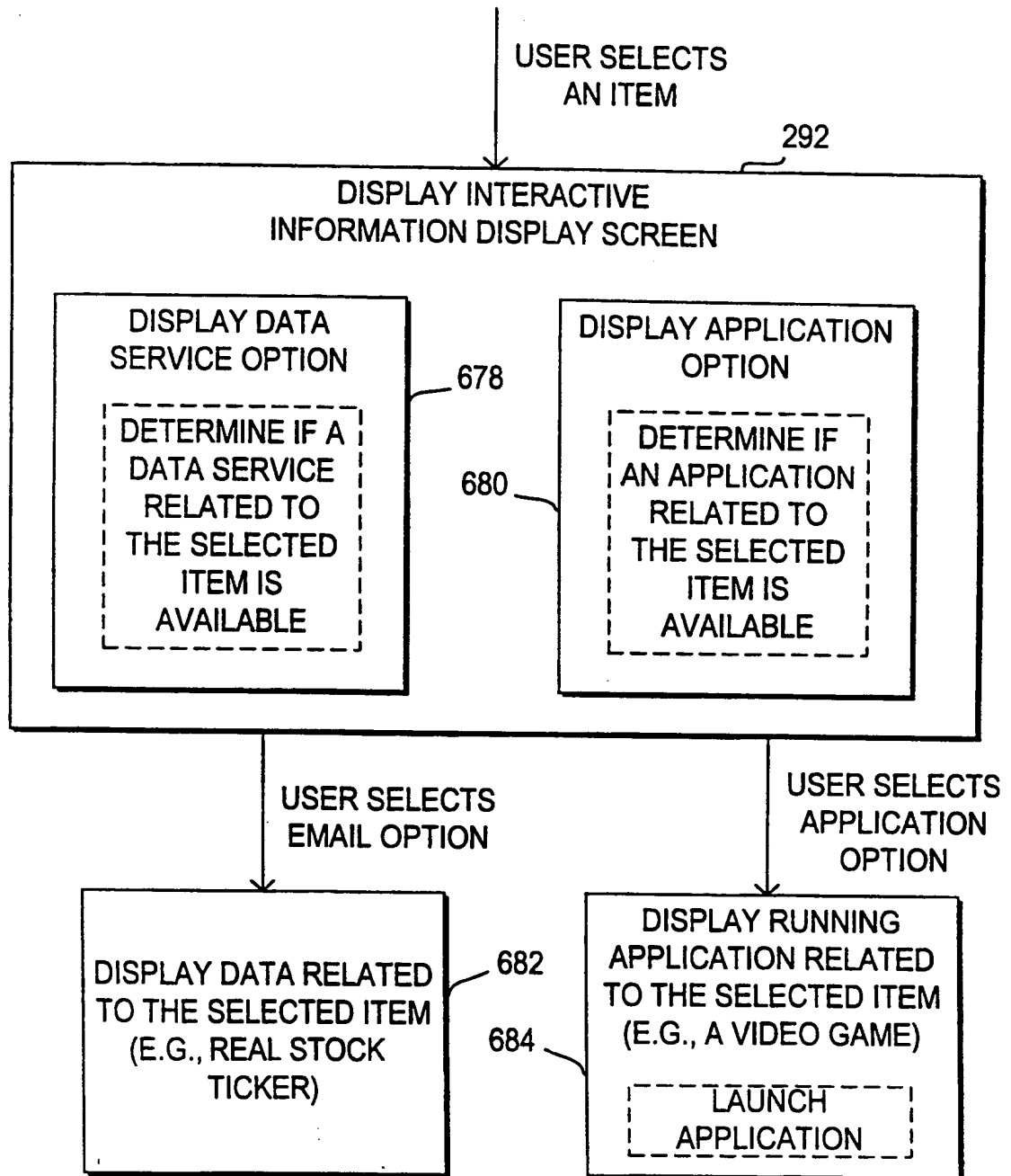


FIG. 29b

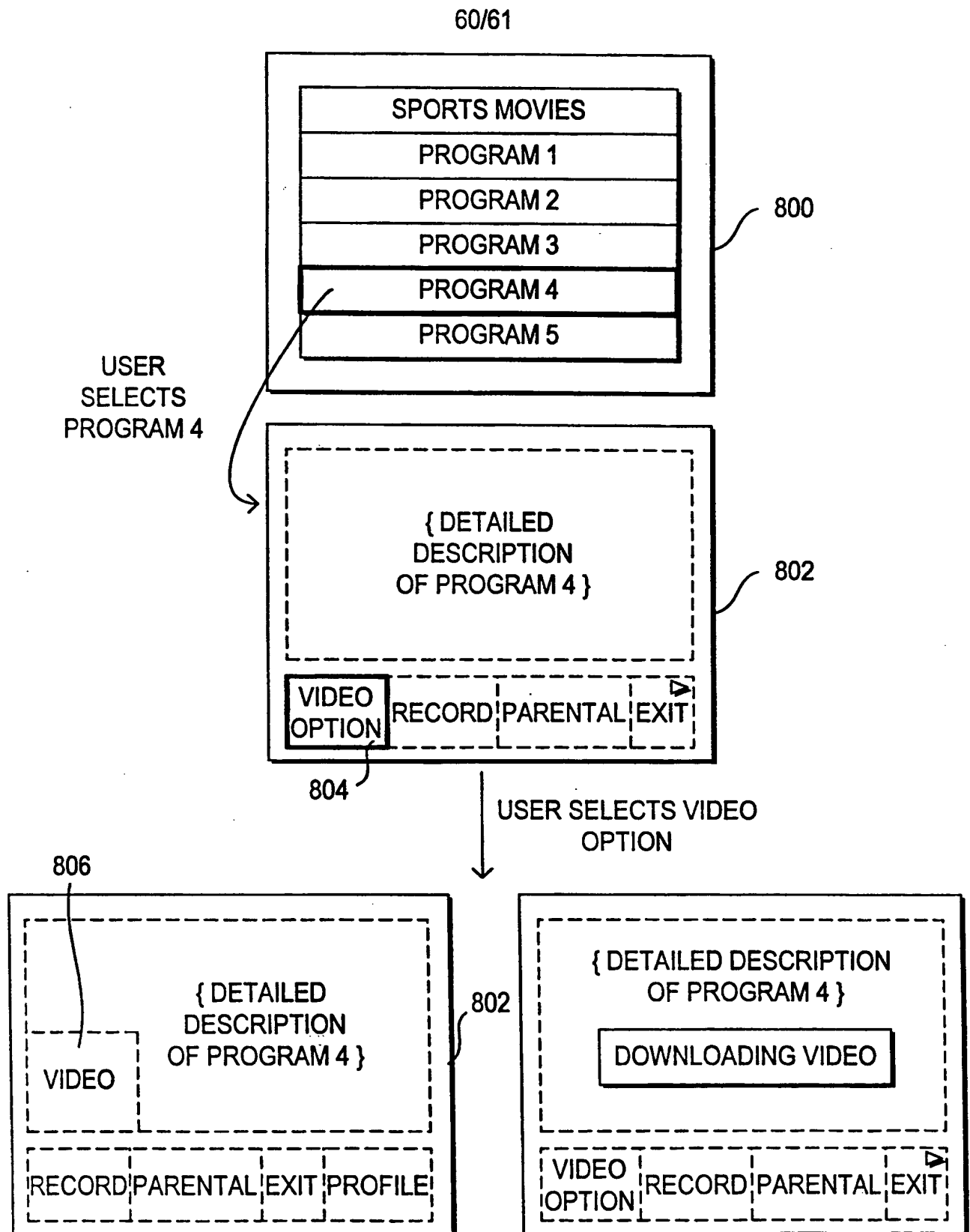
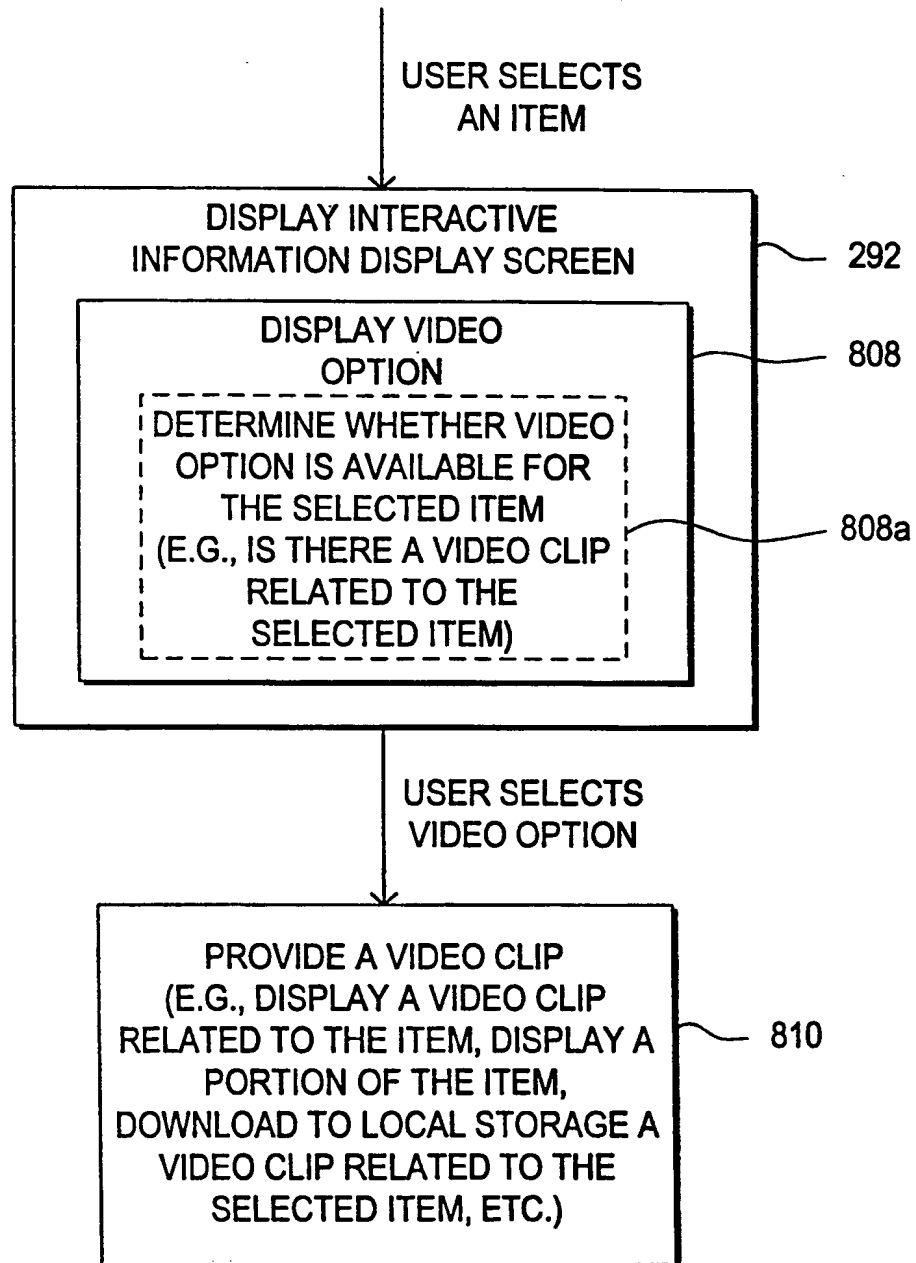


FIG. 30a

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*FIG. 30b*

Int'l Application No
PCT/US 99/26835

According to International Patent Classification (IPC) or to both national classification and IPC

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 854 645 A (TEXAS INSTRUMENTS INC) 22 July 1998 (1998-07-22)	1-6, 10, 11, 21, 57-63, 74, 75, 77-79, 83-100, 110-117, 135-137, 141, 144-153, 169, 176-181, 183, 184, 211, 220, 221, 240-247, 257, 258, 260-262, 266-283,

-/-

Y Patent family members are listed in annex.

"&" document member of the same patent family

17/03/2000

Materne, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/26835

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X		293-300, 318-320, 324
Y	column 3, line 33 -column 21, line 53	327-336, 345 7-9, 18-20, 35,76, 80-82, 201-203, 218,219, 222,259, 263-265
Y	EP 0 827 340 A (MATSUSHITA ELECTRIC IND CO LTD) 4 March 1998 (1998-03-04) column 6, line 15 -column 33, line 13	7,8
Y	US 5 677 708 A (MATTHEWS III JOSEPH H ET AL) 14 October 1997 (1997-10-14) column 5, line 37 -column 18, line 49 -/-	9

INTERNATIONAL SEARCH REPORT

Int'l. Application No.

PCT/US 99/26835

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 26584 A (PREVUE INTERNATIONAL INC) 18 June 1998 (1998-06-18)	1,4, 12-17, 21-32, 34, 64-67, 80,101, 102,108, 109, 118-135, 138-140, 143, 155-160, 162-175, 182, 184-197, 199,200, 204-210, 212-217, 248-256, 284,285, 291,292, 301-318, 321-323, 326, 338-343, 346-358
X		18-20, 33, 35-56, 64-73, 142,154, 161,198, 201-203, 218,219, 222-239, 325,337, 344
Y	page 8, line 10 -page 43	
Y	WO 96 41478 A (TV GUIDE ON SCREEN) 19 December 1996 (1996-12-19)	33, 35-56, 142,154, 161,198, 222-239, 325,337, 344
Y	page 12, line 26 -page 62	
Y	EP 0 572 090 A (KONINKL PHILIPS ELECTRONICS NV) 1 December 1993 (1993-12-01) column 2, line 50 -column 7	64-73
Y	US 5 699 107 A (MATTHEWS III JOSEPH H ET AL) 16 December 1997 (1997-12-16) column 3, line 37 -column 14	76,259
	-/-	

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/26835

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WO 95 01056 A (APPLE COMPUTER) 5 January 1995 (1995-01-05) page 22 -page 71</p>	<p>80-82, 263-265</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/26835

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0854645	A	22-07-1998	JP 10207914 A SG 67469 A	07-08-1998 21-09-1999
EP 0827340	A	04-03-1998	CN 1191449 A JP 10126753 A	26-08-1998 15-05-1998
US 5677708	A	14-10-1997	NONE	
WO 9826584	A	18-06-1998	AU 5696898 A EP 0945003 A NO 992703 A PL 334062 A AU 8913098 A WO 9914947 A	03-07-1998 29-09-1999 09-08-1999 31-01-2000 05-04-1999 25-03-1999
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EP 0572090	A	01-12-1993	US 5223924 A DE 69322439 D DE 69322439 T JP 6197342 A US 5469206 A US 5483278 A	29-06-1993 21-01-1999 24-06-1999 15-07-1994 21-11-1995 09-01-1996
US 5699107	A	16-12-1997	NONE	
WO 9501056	A	05-01-1995	US 5621456 A AU 7209294 A	15-04-1997 17-01-1995

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 June 2000 (08.06.2000)

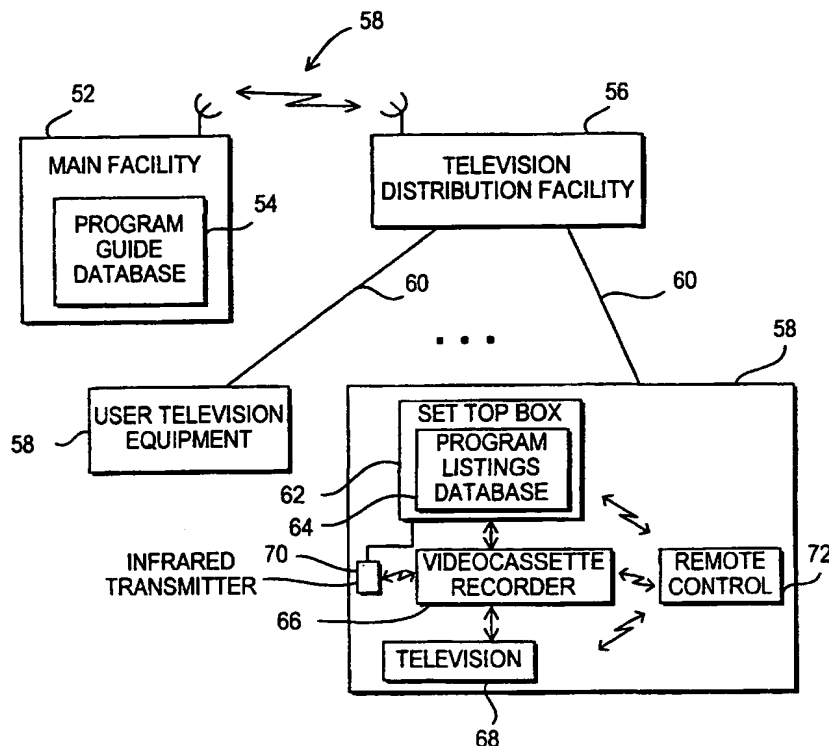
PCT

(10) International Publication Number
WO 00/33573 A1

- (51) International Patent Classification⁷: **H04N 5/445** (72) Inventors: **HERRINGTON, W., Benjamin**; 725 W. 20th Street, Tulsa, OK 74107 (US). **ELLIS, Michael, D.**; 1300 Kingwood Place, Boulder, CO 80304 (US).
- (21) International Application Number: **PCT/US99/28402**
- (22) International Filing Date:
30 November 1999 (30.11.1999) (74) Agents: **TREYZ, G., Victor et al.**; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).
- (25) Filing Language: English (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (26) Publication Language: English
- (30) Priority Data:
60/110,989 3 December 1998 (03.12.1998) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent
- (71) Applicant: **UNITED VIDEO PROPERTIES, INC.** [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US).

[Continued on next page]

(54) Title: ELECTRONIC PROGRAM GUIDE WITH RELATED-PROGRAM SEARCH FEATURE



(57) Abstract: A system for searching for programs is provided. The system may provide the user with an opportunity to indicate an interest in a given program. The system may provide the user with an opportunity to request that the system locate programs that are related to the given program in which the user has indicated an interest. The system may locate program listings that are related to the given program. The located program listings may be related to the given program based on attributes of the given program. The system may display a list of located listings and allow the user to select listings from the list. The system may tune to a program selected from the list, may display an information display screen for a program selected from the list, etc. The system may provide the user with an opportunity to configure and save search parameters. The system may sort related program listings based on the attributes of the given program. The system may provide the user with the opportunity to retrieve saved searches to locate currently available program listings and the

opportunity to delete a saved search, rename a saved search, receive automatic notifications of programs matching a saved search, etc.



WO 00/33573 A1



(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(15) Information about Correction:

see PCT Gazette No. 28/2001 of 12 July 2001, Section II

Published:

— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(48) Date of publication of this corrected version:

12 July 2001

ELECTRONIC PROGRAM GUIDE WITH
RELATED-PROGRAM SEARCH FEATURE

Background of the Invention

This invention relates to interactive
5 television systems such as interactive television
program guide systems, and more particularly, to
techniques for program searching in these systems.

Cable, satellite, and broadcast television
systems provide a large number of television channels.
10 Typically, the number of channels provided by cable and
satellite systems is over a hundred and ever
increasing. Television viewers have traditionally
consulted printed television program schedules to
obtain programing information. More recently,
15 interactive electronic television program guides have
been developed to allow television program information
to be displayed on viewer television equipment.

Interactive electronic television program
guides ("program guides") typically provide program
20 listings for all channels available in the television
system. Some program guides include features for
allowing users to search for programs. Such search

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features are often complex, time-consuming, and cumbersome. For example, such search features may require that a user select search parameters such as preferred programming genres before searching for
5 programs, that a user navigate through several display screens before being allowed to initiate a search, that the user enter at least a portion of a program title to initiate a search, etc.

It is therefore an object of the present
10 invention to provide a television system that includes an improved program searching feature.

Summary of the Invention

These and other objects of the invention are accomplished in accordance with the principles of the
15 present invention by providing a system for searching for programs. The system may provide the user with an opportunity to indicate an interest in a given program. The system may provide the user with an opportunity to request that the system locate programs that are
20 related to the given program in which the user indicated an interest. The system may locate program listings that are related to the given program. The located program listings may be related to the given program based on attributes of the given program.

25 The system may display a list of the located program listings. The system may provide the user with an opportunity to select from the list of related programs. The system may tune to a program selected from the list, may display an information display
30 screen for a program selected from the list, etc.

The system may provide the user with an opportunity to configure search parameters. For example, The system may present the user with a list of

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attributes for the given program and may allow the user to select one or more attributes and may allow the user to select which logical operations (e.g., and/or operations) are to be performed on the attributes. The
5 system may search television program listings and may display a list of related programs based on the selected attributes.

The system may sort related program listings based on the attributes of the given program. The
10 system may provide the user with an opportunity to save search parameters for use at a later time. The system may display a list of previously saved searches and may provide the user with an opportunity to direct the system to locate currently available program listings
15 based on a saved search from the list. The system may locate currently available listings based on the user-selected search parameters from the saved search when the saved search is retrieved. The system may allow the user to delete a saved search. The system may
20 automatically display a notification based on user-selected search parameters from a saved search. The system may provide the user with an opportunity to view the user-selected search parameters for a saved search.

Further features of the invention, its nature
25 and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

Brief Description of the Drawings

FIG. 1 is a diagram of an illustrative
30 interactive television program guide system in accordance with the present invention.

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FIG. 2 is a flow chart of illustrative steps involved in providing program searching in accordance with the present invention.

FIG. 3a is a flow chart of illustrative steps
5 involved in providing an opportunity to request that the system locate programs related to a given program in accordance with the present invention.

FIG. 3b is a diagram of an illustrative
sequence of illustrative display screens for providing
10 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3c is a diagram of an illustrative
sequence of illustrative display screens for providing
15 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3d is a diagram of an illustrative
sequence of illustrative display screens for providing
20 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3e is a diagram of an illustrative
sequence of illustrative display screens for providing
25 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 4 is a flow chart of illustrative steps
involved in displaying program listings that are
30 related to a given program in accordance with the present invention.

FIG. 5 is a diagram of an illustrative
sequence of illustrative display screens for displaying

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program listings that are related to a given program in accordance with the present invention.

FIG. 6 is a flow chart of illustrative steps involved in displaying program listings that are
5 related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7a is a diagram of an illustrative sequence of illustrative display screens for searching
10 for program listing that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7b is a diagram of an illustrative sequence of illustrative display screens for displaying
15 program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7c is a diagram of an illustrative sequence of illustrative display screens for searching
20 for program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 8a is a diagram of an illustrative sequence of illustrative display screens for searching
25 for program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 8b is a diagram of an illustrative sequence of illustrative display screens for selecting
30 a program listing that is related to a user-selected program in accordance with the present invention.

FIG. 9 is a flow chart of illustrative steps involved in providing display screens when a user makes

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selections from a related-program find display screen in accordance with the present invention.

FIG. 10a is a flow of illustrative steps involved in displaying a display screen having a list of saved searches in accordance with the present invention.

FIG. 10b is a diagram of an illustrative sequence of illustrative display screens for providing a display screen having a list of saved searches in accordance with the present invention.

FIG. 11 is flow chart of illustrative involved in providing saved search features in accordance with the present invention.

FIG. 12 is a diagram of an illustrative sequence of illustrative display screens for searching for program listings based on a saved search in accordance with the present invention.

FIG. 13 is a diagram of an illustrative sequence of illustrative display screens for deleting a saved search in accordance with the present invention.

FIG. 14 is a diagram of an illustrative sequence of illustrative display screens for providing an automatic notification of a program matching a saved search in accordance with the present invention.

FIG. 15 is a diagram of an illustrative sequence of illustrative display screens for displaying search parameters for a saved search in accordance with the present invention.

FIG. 16 is a diagram of an illustrative sequence of illustrative display screens for providing save search features in accordance with the present invention.

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Detailed Description of the Preferred Embodiments

An illustrative interactive television program guide system 50 in accordance with the present invention is shown in FIG. 1. Main facility 52 includes a program guide database 54 for storing program guide information (e.g., television program listings data, program-related information, service listings data, service-related information, pay-per-view ordering information, television program promotional information, etc.).

Main facility 52 preferably includes a processor to handle information distribution tasks. Information from database 54 may be transmitted in parallel via communications links such as communications link 58 to multiple television distribution facilities such as television distribution facility 56. Only one television distribution facility is shown in FIG. 1 to avoid over complicating the drawings. Each communications link 58 may be a satellite link, a telephone network link, a combination of such links, or another suitable communications path. Text, graphics, and video data signals may be transmitted over link 58. If it is desired to transmit video signals over communications link 58, a relatively high bandwidth link such as a satellite link is generally preferable to a relatively low bandwidth link such as a telephone line.

Television distribution facility 56 is a facility such as a cable system headend, a broadcast distribution facility, or a satellite television distribution facility for distributing television signals to viewers.

The program guide information transmitted by main facility 52 to television distribution facility 56

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includes television program listings data such as program times, channels, titles, descriptions, program type, genre, actors, etc. Transmitted program guide information may include pay program data such as

5 pricing information for individual programs and subscription channels, time windows for ordering programs and channels, telephone numbers for placing orders that cannot be impulse ordered, etc.

Television distribution facility 56 may

10 distribute program guide information received from main facility 52 to user television equipment 58 via communications paths 60. User television equipment 58 may be any suitable equipment for providing television that contains sufficient processing capabilities to

15 monitor viewing activities, analyze these activities and display appropriate program listings information for the user.

Communications paths 60 may be cable links, fiber optic links, satellite links, broadcast links, or

20 other suitable link, or a combination of such links. Any suitable communications scheme may be used to transmit data over paths 60, including in-band transmissions, out-of-band transmissions, digital transmissions, analog transmissions, cable

25 transmissions, satellite transmissions, over-the-air transmissions, multichannel multipoint distribution services (MMDS) transmissions, etc.

Communications paths 60 preferably have sufficient bandwidth to allow television distribution

30 facility 56 to distribute television programming, program listings information, advertisements, and other information to user television equipment 58. Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to user television

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equipment 58 via communication paths 60. If desired, some of the data may be distributed to user television equipment 58 by one or more distribution facilities that are separate from television distribution facility
5 56 using communication paths that are at least partly separate from communication paths 60.

The data distribution technique that is used to distribute data on paths 60 may depend on the type of information that is being distributed. For example,
10 text and graphics may be distributed over an out-of-band channel using an out-of-band modulator or distributed in the vertical blanking interval lines of an analog video channel. Video information may also be distributed in this way, although large quantities of
15 video information may be more efficiently distributed using one or more digital channels or streams on paths 60. Such digital channels or streams may also be used for distributing text and graphics.

Each user television equipment device 58 has
20 a receiver which is typically a set-top box such as set-top box 62. The receiver may also be other suitable television equipment such as an advanced television receiver into which circuitry similar to set-top-box circuitry has been integrated or a personal
25 computer television (PC/TV). For illustrative purposes, the present invention will be described in the context of user television equipment 58 that uses set-top boxes.

Each set-top box 62 is typically connected to
30 an optional videocassette recorder 66 so that selected television programs may be recorded. Videocassette recorder 66 is typically connected to a television 68. To record a program, set-top box 62 tunes to a particular channel and sends control signals to

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videocassette recorder 66 (e.g., using infrared transmitter 70) that instructs videocassette recorder 66 to start and stop recording at the appropriate times.

5 Television program listings, advertisements, programming information, and other information may be displayed on television 68. Each set-top box 62, videocassette recorder 66, and television 68 can be controlled by one or more remote controls 70 or any
10 other suitable user input interface, such as a wireless keyboard, mouse, trackball, dedicated set of buttons, touch screen display remote, etc. Remote controls, such as remote control 70, have various buttons that can be pressed by the user such as arrow keys (e.g.,
15 for directing on-screen movement of a highlight region, for directing scrolling functions, etc.), an OK, select, enter, or other such selection key for making a selection (hereinafter referred to as an OK key), channel number keys (for selecting a television
20 channel), a favorites key (to invoke functions related to user preferences), a delete key (to delete menu items or to express a disinterest in certain user preferences), an information key for receiving information on a program (hereinafter referred to as an
25 INFO key), a specific feature key (e.g., a related-program search key to invoke program searching), etc. For illustrative purposes, many aspects of the present are discussed primarily in the context of a user interface being a remote control.

30 Certain program guide features, such as pay program purchasing, the purchasing of products or services, and data collection functions, may require that user television equipment 58 transmit data to television distribution facility 56 over communications

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paths 60. If desired, such data may be transmitted over telephone lines or other separate communications paths. If features such as these are provided using facilities separate from television distribution
5 facility 56, some of the communications involving user television equipment 58 may be made directly with the separate facility (not shown).

If desired, an interactive television program guide system may be implemented using a data-relay
10 architecture. In such an architecture, television distribution facility 56 may serve as a data relay site and user television equipment 58 may be a data destination site. For example, as television distribution facility 56 receives information from main
15 facility 52, television distribution facility 56 may continuously or periodically distribute information to user television equipment 58. In a data-relay architecture, a program guide implemented on user television equipment 58 may use a database (e.g.,
20 database 64) for storing program guide information at user television equipment. Program guide information may include program listings and program attributes. Program attributes may be information such as program title, program actors, program duration, program genre
25 (e.g., sports, comedy, movies, etc.), program channel, scheduled program duration, program rating (e.g., TV-G, PG-13, etc.), program content rating (or critics' rating or star rating, e.g., one star, two stars, etc.) and other related parameters that can be tagged to a
30 program. Television distribution facility 56 may also poll set-top boxes periodically for certain information (e.g., pay program account information or information regarding programs that have been purchased and viewed using locally-generated authorization techniques).

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The features of the present invention may be implemented in a client-server arrangement or in a combination client-server and data-relay arrangement. In such arrangements, the server (e.g., television
5 distribution facility 56) may include a database that may include program listing information.

For clarity, the present invention is sometimes described primarily in the context of program guides that are implemented on user television
10 equipment rather than in the context of program guides that are implemented partially on a server and partially on user television equipment or a more fully server-based architecture.

Each set-top box 62 preferably contains a
15 processor to handle tasks associated with implementing an application on the set-top box 62 that assists the user in searching for programs. For example, a stand-alone application may be provided that supports program searching, as described more fully below. If desired,
20 these tasks may be implemented using a program guide application. For clarity, the present invention will be described primarily in the context of such a program guide application and in the context of a program guide system.

25 Illustrative steps involved in providing program searching in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 2. Initially at step 80, the program guide may provide a user with an
30 opportunity to request that the system locate programs that are related to a particular program (e.g., a program in which the user has indicated an interest using the system). The program guide may, at step 82, display a list of programs that are related to the

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particular program when the user requests that the system locate programs that are related to the particular program. The program guide may include programs in the list based on criteria, such as whether
5 a program is related in attribute to the particular program, whether a program is a sequel or prequel of the particular program, whether a program is in the same program series as the particular program, whether a program is a series that is related to the particular
10 program, whether a program is related the user-selected program in content or subject matter, whether a program has the same actor(s), director, category, theme, or production year as the user-selected program, etc.

Illustrative steps involved in providing a
15 user with an opportunity to request that a system locate programs related to a given program in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 3a. At step 84, the program guide may provide
20 a user with an opportunity to indicate an interest in a given program. The user may indicate an interest in the given program by, for example, positioning a highlight region on a program listing for the given program, tuning the system to the given program,
25 selecting that an information display screen for the given program be displayed, etc. At step 86, the program guide may provide the user with an opportunity to request that the system locate programs that are related to the given program.

30 Illustrative display screens of FIG. 3b, FIG. 3c, FIG. 3d, and FIG. 3e may be provided based on the illustrative steps of FIG. 3a. As shown in FIG. 3b, the program guide may display related program find display screen 94 for the program Seinfeld when a user

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presses a single user interface key while a video for Seinfeld is displayed in display screen 92. The single user interface key may, for example, be a search key of a remote control for requesting that the system locate
5 related programs.

If desired, as shown in FIG. 3c, the program guide may display related-program find display screen 90 for the program Seinfeld when the user presses a predetermined sequence of user interface keys after
10 navigating a highlight region on a listing for Seinfeld in program listings display screen 88. The predetermined sequence of user interface keys may, for example, be pressing a search key and an OK key of a remote control.

15 A sequence of keys may be used when the user interface device (e.g., a remote control) does not have a key dedicated to providing the user with an opportunity to request that the system locate related programs.

20 If desired, as shown in FIG. 3d, the program guide may display related-program find display screen 98 for the Knicks v. Wizards basketball game when the user presses a search key of a remote control after navigating a highlight region on the listing for the
25 Knicks v. Wizards basketball game in sports category program listings display screen 96.

If desired, as shown in FIG. 3e, the program guide may display related-program find display screen 102 for Dateline when a user presses a remote control
30 OK key after navigating a highlight region on related programs option 104 of information display screen 100 for Dateline. The program guide may have displayed information display screen 100 for Dateline when, for example, the user pressed an OK key of a remote control

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after navigating a highlight region on a Dateline program listing, the user pressed an INFO key when video for Dateline is being displayed, etc. Examples of program guide systems with information display screen capabilities are provided in Rudnick et al., U.S. Patent Application Serial No. 09/356,268 filed July 16, 1999, which is hereby incorporated by reference herein in its entirety.

Illustrative steps involved in displaying program listings that are related to a given program in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 4. At step 106, the program guide may provide the user with an opportunity to indicate an interest in a given program. At step 108, when the user indicates an interest in the given program, the program guide may provide the user with an opportunity to request that the system locate programs that are related to the given program.

At step 110, the program guide may locate program listings (e.g., program listings stored in a program guide database, such as database 64 of FIG. 1) that are related to the given program. The program guide may locate program listings based on attributes of the given program. For example, the program guide may locate program listings for programs that have an attribute that matches an attribute of the given program (e.g., a common actor, same content, same subject matter, same series, common director, same category, same theme, common production year, etc.), program listings for programs that have a plurality of attributes matching attributes of the given program, program listings for programs that have attributes that are related to the attributes of the given program

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(e.g., prequels, sequels, similar content, similar subject matter, related series, etc.), etc.

At step 112, the program guide may display a display screen (or, if desired, an overlay) having
5 listings for programs which are related to the user-selected program. From the list, the user may find a particular program of interest to the user. The program guide may provide the user with an opportunity to select a program listing from the list at step 114.
10 Illustrative program listings display screen 116, illustrative information display screen 118, and illustrative related-program find display screen 120 of FIG. 5 may be provided based on the illustrative steps of FIG. 4. The program guide may display information
15 display screen 118 for Star Trek: The Next Generation - Episode Y when a user selects a listing for Star Trek: The Next Generation - Episode Y in program listings display screen 116 (e.g., by pressing an INFO key when a highlight region is positioned on that listing).
20 Information display screen 118 may include a related programs options 122 for requesting to find programs related to Star Trek: The Next Generation - Episode Y.

The program guide may display related program find display screen 120 when a user selects the related
25 programs option 122 from information display screen 118. Related-program find display screen 120 includes a list of programs related to Star Trek: The Next Generation - Episode Y that contains: Episode K of Star Trek: The Next Generation, Episode D of Star Trek:
30 Voyager, Star Trek: Wrath of Khan, Episode Z of Babylon 5, Episode X of Babylon 5, etc. The list may have been sorted based on attributes that were used by the program guide to locate the displayed program listings. For example, the list may have been sorted based on

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which attribute caused the match, or for example, based on how many attributes matched. Related-program find display screen 120 may include an indicator, such as arrow 124, to inform the user that the list may be
5 scrolled to display further listings for related programs that are not currently displayed. Such an indicator may be used when there is insufficient space for displaying all the related programs in a related program find display screen.

10 Illustrative steps involved in displaying program listings that are related to a given program based on user-configured search parameters in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown
15 in FIG. 6. Steps 126 and 128 are the same as steps 106 and 108 of FIG. 4, respectively, and are discussed above. At step 130 of FIG. 6, when the user requests that the system locate programs that are related to a given program, the program guide may provide the user
20 with an opportunity to configure search parameters for searching for related programs based on attributes of the user-selected program. At step 132, the program guide may then locate program listings based on the user-configured search parameters. The program guide
25 may locate program listings from program listings stored in a database, such as program listings database 64 FIG. 1. The location of the program listings database may depend on the communications arrangement of the interactive television program guide system
30 (e.g., in a client-server arrangement at least part of the database may be located at a television distribution facility). At step 134, the program guide may display a display screen including on-screen listings for programs that are related to the given

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program based on the user-configured search parameters. At step 134a, the program guide may sort the located listings for display based on the user-configured search parameters. At step 134b, the program guide may
5 provide the user with an opportunity to select one of the displayed programs listings.

Illustrative display screen 136 and illustrative related-program find search configuration display screen 138 (hereinafter, configuration display
10 screen 138) of FIG. 7a may be provided based on the illustrative steps of FIG. 6. The program guide may display configuration display screen 138 for an episode of Star Trek: The Next Generation when a user presses a single key of a remote control while a video for that
15 episode of Star Trek: The Next Generation is being displayed. Configuration display screen 138 may contain an on-screen list of attributes for the given program, Star Trek: The Next Generation. The configuration display screen 138 may contain options
20 for providing the user with an opportunity to assign various importance levels to the on-screen program attributes. The option may provide the user with an opportunity to assign different importance levels such as required, desired, ignored, or excluded to the
25 program attributes.

Configuration display screen 138 shows that importance levels may be assigned to the program attributes for the given episode of Star Trek: The Next Generation so that when locating related program
30 listings, the program guide excludes programs that are Star Trek: The Next Generation, ignores whether a program is a Star Trek program when deciding whether it matches, ignores whether a program is a Star Trek movie when deciding whether it matches, requires matching

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programs to be science fiction, requires matching programs to have Patrick Stewart. Configuration display screen 138 may include a search option that may provide the user with an opportunity to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

Illustrative related-program find display screens 140 and 142 of FIG. 7b may be provided based on the illustrative steps of FIG. 6. The program guide may display related-program find display screen 140 when, for example, the user selects the search option from configuration display screen 138 of FIG. 7a. Display screen 140 may include a list of programs that are related to the given program based on the search parameters of configuration display screen 138 of FIG. 7a. The list of related programs in display screen 140 includes the program Lifeforce, which is a science fiction program (a required attribute) starring Patrick Stewart (a required attribute), and includes three Star Trek movies (Insurrection, First Contact, and Generations) that are also science fiction programs starring Patrick Stewart and also starring Jonathan Frakes (a desired attribute). Lifeforce may be displayed at the bottom of the list because the other programs more closely match the user-configured search parameters.

Display screen 140 may include option 144 for displaying more program listings that are related to Star-Trek: The Next Generation based on the user-configured search parameters. Display screen 140 may include save configuration option 146 that provides the user with an opportunity to save the user-configured search parameters. The program guide may display

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related-program find display screen 142 when the user selects save configuration option 146 of display screen 140. Display screen 142 is the same display screen as display screen 140 except that display screen 142
5 includes unsave configuration option 148 that provides the user with an opportunity to unsave the user-configured search parameters (e.g., delete the saved user-configured search parameters).

If desired, an arrangement such as that shown
10 in FIG. 7c may be used to search for related programs. Initially, the user may indicate an interest in a given program by selecting a program listing for the given program from an on-screen display of program listings, by pressing an OK button or other remote control button
15 while tuned to the given program (e.g., while tuned to the given program with a set-top box or the like), by selecting the program from the results of a search, etc.

A list of attributes for the given program
20 (such as the attribute list of display screen 300 of FIG. 7c) may be displayed for the user (e.g., by the program guide or other interactive application running on the system). A moveable highlight region such as highlight region 302 or other such indicator may be
25 used to provide the user with an opportunity to select attributes of interest to be used in searching for related programs.

As shown in display screen 304 of FIG. 7c, the user may select one or more attributes (e.g., by
30 pressing a remote control OK button or otherwise selecting desired attributes). The system may display a visual indication of which program attributes have been scheduled. For example, the system may highlight selected attributes, may change their color, text font,

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brightness, etc. or may display an indicator such as indicators 306 to indicate which program attributes have been selected by the user. When the user highlights search option 308 and presses a remote
5 control OK button (or otherwise selects option 308), the system searches for program listings matching the selected program attributes. When plural attributes are selected, the search may be performed using a logical AND or a logical OR function. The search
10 results may be displayed using any suitable on-screen arrangement and may be selectable (for more information, automatic tuning, etc.) if desired.

The arrangement of FIG. 7c is merely illustrative. Any suitable arrangement may be used for
15 providing an on-screen display of program attributes related to a selected program. The attributes may include program genre(s), actors, rating, channel, director, year produced, or any other suitable program attributes. The program attribute information may be
20 provided with the program listings data. In a client-server arrangement, for example, the program attributes may be maintained with program listings data stored on a server located at a cable system headend (or at another suitable location). In configurations in which
25 program listings are stored locally on a set-top box or other user equipment, program attributes may be maintained locally.

Illustrative information display screen 150 and illustrative related-program find search
30 configuration display screen 152 (hereinafter, configuration display screen 152) of FIG. 8a may be provided based on the illustrative steps of FIG. 6. The program guide may display information display screen 150 when a user selects to receive information

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on the Denver Broncos v. Dallas Cowboys football game. Information display screen 150 may include related programs option 154 that provides the user with an opportunity to request that the system locate programs
5 that are related to the Denver Broncos v. Dallas Cowboys football game. The program guide may display configuration display screen 152 when the user selects the related programs options from information display screen 150. Configuration display screen 152 may
10 include an on-screen list of program attributes that are to be configured by the user.

The on-screen program attributes may differ based on the specifics of the given program and based on the category for the given program. For example,
15 for a sports category program, the on-screen list may include attributes that are specific to that sports program and/or include attributes that are related to sports programs in general. As shown, configuration display screen 152 may include the following
20 attributes: other football games, NFL games, Broncos games, Cowboys games, any sporting events, football-related programs, programs with John Elway as guest, etc. The user may then configure the search parameters to require matching programs to be football games,
25 desire NFL games and Broncos games, exclude Cowboys games, ignore whether a program is a sporting event when deciding whether it matches, ignore whether a program is a football related program when deciding whether it matches, and ignore whether a program has
30 John Elway as guest when deciding whether it matches.

Illustrative related program find display screen 158 of FIG. 8b may be provided based on the illustrative steps of FIG. 6. Display screen 158 may be displayed when a user selects search option 156 from

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configuration display screen 152 of FIG. 8a. Display screen 158 of FIG. 8b may include listings that are sorted for display based on the user-configured search parameters of configuration display screen 158. The
5 program guide may display program display screen 160 that contains video of a current program when the user selects a listing for a current program from the program listings contained in related-program find display screen 158. If desired, the program guide may
10 display information display screen 162 for a program when the user selects a program listing from the program listings contained in related-program find display screen 158.

If desired, the listings in related-program find display screen 158 may include program title, air
15 time, channel, rating, pay-per-view information, etc.

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in providing
20 the illustrative display screens of FIG. 8b are shown in FIG. 9. At step 164, the program guide may display a display screen having on-screen program listings that are related to a given program. Step 164 may include step 166 in which the program may provide the user with
25 an opportunity to select one of the on-screen program listings. At step 168, the program guide may tune to a channel for a current program when the user selects one of the on-screen listings that is for a current program. At step 170, the program guide may display an
30 information display screen for a selected on-screen listing when the user selects that on-screen listing. At step 172, the program guide may return the user to viewing television or to an earlier display screen when the user exits from the display screen having the

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related on-screen program listings (e.g., presses an exit or back key of a remote control).

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in displaying a list of saved searches are shown in FIG. 10a. At step 174, the program guide may provide the user with an opportunity to select a saved search option. At step 176, the program guide may display a display screen having a list of saved searches when a user selects the saved search option.

Illustrative main menu display screen 178 and illustrative saved searches display screen 180 of FIG. 10b may be provided based on the illustrative steps of FIG. 10a. The program guide may display main menu display screen 178 to provide a main selection menu for accessing program guide features. Main menu display screen 178 may include saved searches option 182. The program guide may display saved searches display screen 180 when the user selects saved searches option 182. Saved searches display screen 180 may include a list of saved-searches that are identified on the screen using the given program title for each saved search. When two saved searches are for two programs with the same title, the program guide may use numbering to distinguish the listings. If desired, the user may have been allowed to name the saved searches. For example, the program guide may have provided the user with an opportunity to enter a name (e.g., by selecting or entering alphanumeric letters with a user interface device) for a search that a user is directing the program guide to save. The saved searches may be selected by the user to provide the user with an opportunity to search current program listings using

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search parameters that were user-configured in an earlier search of program listings.

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in displaying a list of saved searches are shown in FIG. 11. At step 184, the program guide may display a display screen having a list of saved searches. At step 186, the program guide may provide a user with an opportunity to select a saved search. At step 188, the program guide may display a list of programs based on a search of currently available program listings with saved search parameters from an earlier search.

At step 190, the program guide may provide the user with an opportunity to delete a saved search from the list of saved searches. At step 192, the program guide may delete a particular saved search when the user selects to delete that particular saved search.

At step 194, the program guide may provide the user with an opportunity to select an option to view user-configured search parameters for a saved search. At step 196, the program guide may display a display screen having user-configured search parameters for a saved search when the user selects to view user-configured search parameters for that saved search. If desired, step 196 may include a step that provides the user with the opportunity to modify the save searches.

At step 198, the program guide may provide the user with an opportunity to set (or remove) an automatic notification for programs that have been located using a saved search. At step 200, the program guide may display a notice that a located program is scheduled to air when the user has selected to receive

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automatic notifications. If desired, step 200 may include a step that provides the user with the opportunity to act on it.

Illustrative saved searches display screen 5 202 and illustrative related-program find display screen 204 of FIG. 12 may be provided based on the illustrative steps of FIG. 11. Saved searches display screen 202 may include a list of saved searches and corresponding options, including a search option, for 10 each saved search. The program guide may display related program find display screen 204 when the users selects the search option for Search #4. Related program find display screen 204 may include a list of current program listings based on the user-configured 15 search parameters for Search #4.

Illustrative saved searches display screens 206 and 208 of FIG. 13 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 206 that includes 20 a delete option for Search #3. The program guide may display saved searches display screen 208 that does not include Search #3 when the user selects the delete option for Search #3.

Illustrative display screen 214 and 25 illustrative saved searches display screens 210 and 212 of FIG. 14 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 210 that includes an automatic notification option for saved searches including Search 30 #5. The automatic notification option for search #5 may initially be off. The program guide may display saved searches display screen 212 that includes an indication that the automatic notification for Search #5 is on when the user selects the automatic

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notification option for Search #5 from display screen 210. After the user exits saved searches display screen 212 and resumes watching television, the program guide may display automatic notification overlay 216 in display screen 214 when the program guide locates a program (e.g., the movie Terminator) using the user-configured search parameters for Search #5. If desired, the program guide may provide a notification display screen for the located program. The notification may be displayed when the program is about to air or is airing. The overlay 216 may include a tune option (for tuning to the channel airing that program), an information option (for display further information on that program), a saved searches option (for displaying a saved searches display screen), an order option (for ordering programs), etc.

Illustrative saved searches display screen 218 and illustrative saved search configuration display screen 220 of FIG. 15 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 220 having an option that provides the user with an opportunity to view search parameters for saved searches. The program guide may display saved search configuration display screen 222 for Search #3 when the user selects the option to view search parameters for Search #3. Saved search configuration display screen 222 may display the saved user-configured search parameters for Search #3, a modify configuration option (to allow the user to adjust the search parameters), and a search option (to search the current program listings based on the user-configured search parameters). If desired, the program guide may provide the user with an opportunity to modify the settings on this screen by highlighting and

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changing them, rather than having to first select a "modify" option.

Illustrative saved searches display screen 224 and illustrative saved search configuration display screen 226 of FIG. 16 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 224 that includes a list of saved searches when a user selects a saved searches option (e.g., saved searches option 182 of FIG. 10b). The program guide may display saved search configuration display screen 226 when the user selects a saved search from saved searches display screen 224. Saved search configuration display screen 226 may include on-screen search settings for the selected saved search. The program guide may provide the user with an opportunity to navigate to any of the settings and to modify them. Saved search configuration, display screen 226 may include search option 228 that when selected, causes the program guide to display a list of matching programs, rename option 230 that allows the user to enter a name (or modify the name) for the selected saved search, delete option 232 that when selected, deletes the selected save search, automatic notification option 234 that provides an automatic notification of programs matching the selected saved search, etc. Automatic Notification option 234 may include an indicator 236 to indicate that option 234 is on.

The foregoing is merely illustrative of the principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

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What is Claimed is:

1. A method for searching for television program listings, comprising:
 providing a user with an opportunity to indicate an interest in a given program;
 displaying an on-screen list of attributes related to the program;
 providing the user with an opportunity to select one of the attributes; and
 displaying a list of program listings related to the selected attribute.

2. The method defined in claim 1, wherein providing the user with the opportunity to indicate an interest in the given program comprises providing the user with an opportunity to select a program listing for the given program from an on-screen display of program listings.

3. The method defined in claim 1, wherein providing the user with the opportunity to indicate an interest in the given program comprises providing the user with an opportunity to indicate an interest in a program that is currently being displayed.

4. The method defined in claim 1, further comprising:
 providing the user with an opportunity to select a plurality of attributes; and
 displaying in the list program listings that are related to the selected attributes.

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5. The method defined in claim 1, further comprising providing the user with an opportunity to select program listings from the list.

6. An interactive television program guide system for searching for television program listings, comprising:

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television equipment is configured to provide a user with an opportunity to indicate an interest in a given program, to display an on-screen list of attributes related to the program, to provide the user with an opportunity to select one of the attributes, and to display a list of program listings related to the selected attribute.

7. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with the opportunity to indicate an interest in the given program by being configured to provide the user with an opportunity to select a program listing for the given program from an on-screen display of program listings.

8. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with the opportunity to indicate an interest in the given program by being configured to provide the user with an opportunity to indicate an interest in a program that is currently being displayed.

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9. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with an opportunity to select a plurality of attributes, and to display in the list program listings that are related to the selected attributes.

10. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with an opportunity to select program listings from the list.

11. A method for use in an interactive television program guide system having user television equipment and a remote control for interfacing with said user television equipment, said method being for searching for programs, comprising:

displaying a display screen that includes a video for a given program;

allowing the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to locate program listings related to the given program; and

displaying a display screen including the program listings located by the system.

12. The method defined in claim 11, further comprising sorting the program listings located by the system for display.

13. The method defined in claim 11, further comprising providing the user with an opportunity to select any of the displayed program listings.

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14. The method defined in claim 13, further comprising tuning to a particular program when the user selects a listing for the particular program from the displayed listings.

15. The method defined in claim 13, further comprising tuning to a current program when the user selects a particular one of the displayed listings that lists a current program.

16. The method defined in claim 13, further comprising displaying an information display screen that contains information related to a particular one of the displayed listing when the user selects that particular listing.

17. The method defined in claim 11, further comprising locating programs based on attributes of the given program.

18. An interactive television program guide system for searching for programs, comprising:

a remote control that is configured to interface with user television equipment;

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television equipment is configured to display a display screen that includes a video for a given program, to allow the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to locate program listings related to the given program, and to display a

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display screen that includes the program listings located by the system.

19. The system defined in claim 18, wherein the user television equipment is further configured to sort the program listings located by the system for display.

20. The system defined in claim 18, wherein the user television equipment is further configured to provide the user with an opportunity to select any of the displayed program listings.

21. The system defined in claim 20, wherein the user television equipment is further configured to tune to a particular program when the user selects a listing for the particular program from the displayed listings.

22. The system defined in claim 20, wherein the user television equipment is further configured to tune to a current program when the user selects a particular one of the displayed listings that lists a current program.

23. The system defined in claim 20, wherein the user television equipment is further configured to display an information display screen that contains information related to a particular one of the displayed listing when the user selects that particular listing.

24. The system defined in claim 18, wherein the user television equipment is further configured to

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locate programs based on attributes of the given program.

25. A method for use in an interactive television program guide system having user television equipment and a remote control for interfacing with said user television equipment, said method being for searching for programs, comprising:

displaying a display screen that includes a video for a given program;

allowing the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to display a display screen containing a plurality of program attributes for the given program;

providing the user with an opportunity to assign various importance levels to the program attributes on the display screen; and

displaying a selectable search option on the same display screen as the program attributes and assigned importance levels that the user selects to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

26. The method defined in claim 25, further comprising providing the user with an opportunity to have the program guide system save the plurality of program attributes for the given program.

27. The method defined in claim 26, further comprising providing the user with an opportunity to have the program guide system save the plurality of

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program attributes for the given program and their assigned importance levels.

28. The method defined in claim 26, further comprising providing the user with an opportunity to delete the saved plurality of program attributes for the given program.

29. The method defined in claim 25, further comprising displaying a list of program listings that the program guide system located based on the attributes and their assigned importance levels.

30. The method defined in claim 29 further comprising providing the user with an opportunity to select program listings from the list.

31. The method defined in claim 30, further comprising displaying information related to a particular program listing that has been selected from the list.

32. The method defined in claim 30, further comprising tuning to a particular program when a listing for the particular program is selected from the list.

33. An interactive television program guide system, comprising:

a remote control that is configured to interface with user television equipment; and

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television

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equipment is configured to display a display screen that includes a video for a given program, to allow the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to display a display screen containing a plurality of program attributes for the given program, to provide the user with an opportunity to assign various importance levels to the program attributes on the display screen, and to display a selectable search option on the same display screen as the program attributes and assigned importance levels that the user selects to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

34. The system defined in claim 33, wherein the user television equipment is further configured to provide the user with an opportunity to have the program guide system save the plurality of program attributes for the given program.

35. The system defined in claim 34, wherein the user television equipment is further configured to provide the user with an opportunity to have the program guide system save the plurality of program attributes for the given program and their assigned importance levels.

36. The system defined in claim 34, wherein the user television equipment is further configured to provide the user with an opportunity to delete the saved plurality of program attributes for the given program.

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37. The system defined in claim 33, wherein the user television equipment is further configured to display a list of program listings that the program guide system located based on the attributes and their assigned importance levels.

38. The system defined in claim 37, wherein the user television equipment is further configured to provide the user with an opportunity to select program listings from the list.

39. The system defined in claim 38, wherein the user television equipment is further configured to display information related to a particular program listing that has been selected from the list.

40. The system defined in claim 38, wherein the user television equipment is further configured to tune to a particular program when a listing for the particular program is selected from the list.

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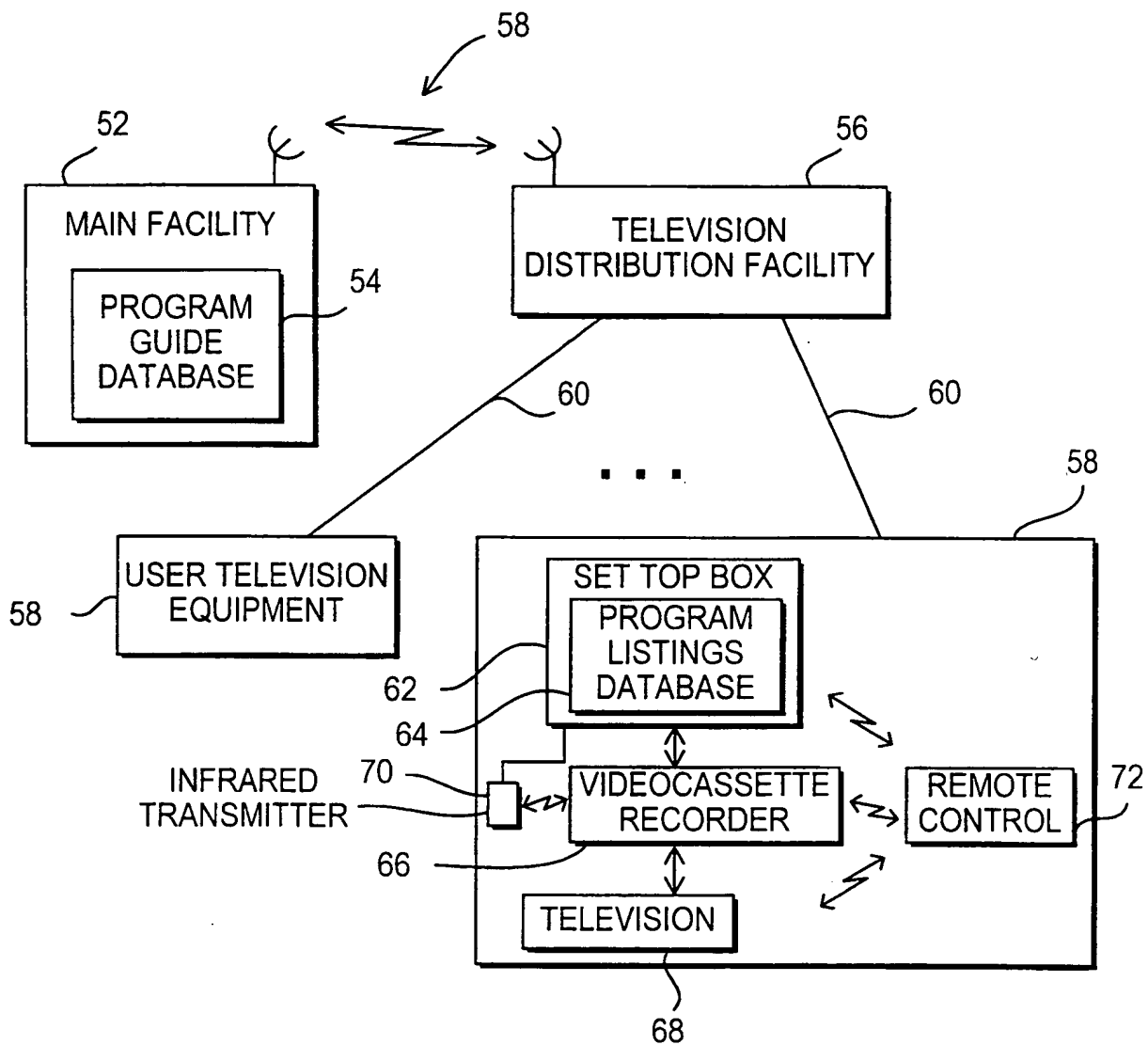
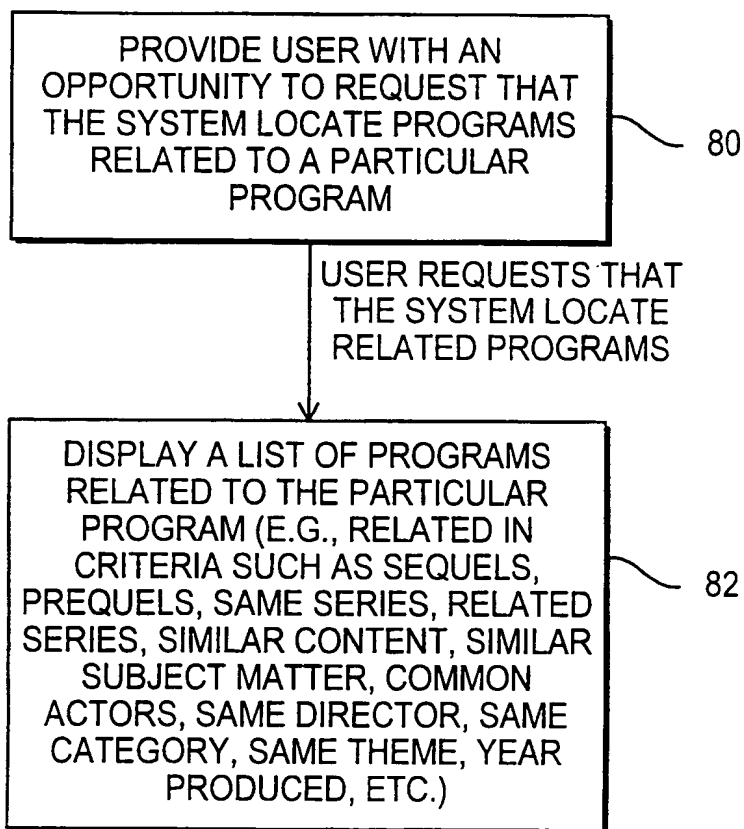


FIG. 1

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*FIG. 2*

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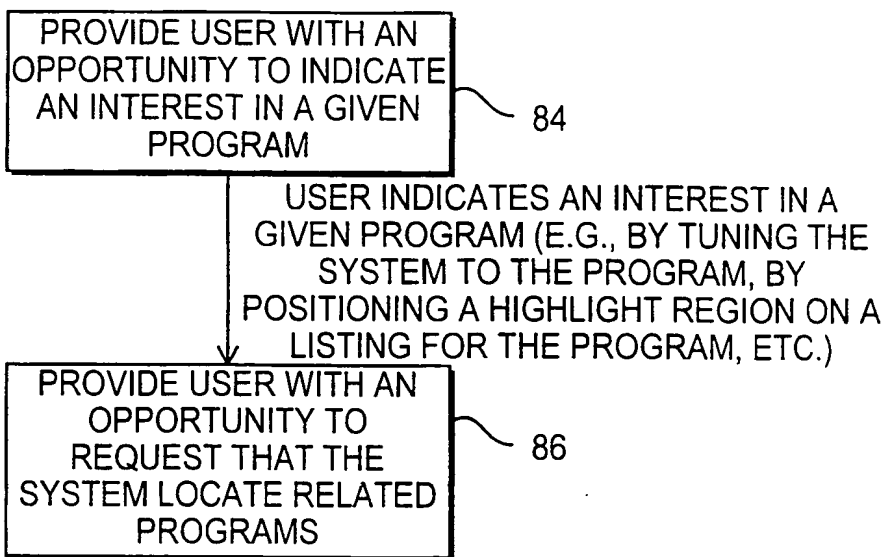


FIG. 3A

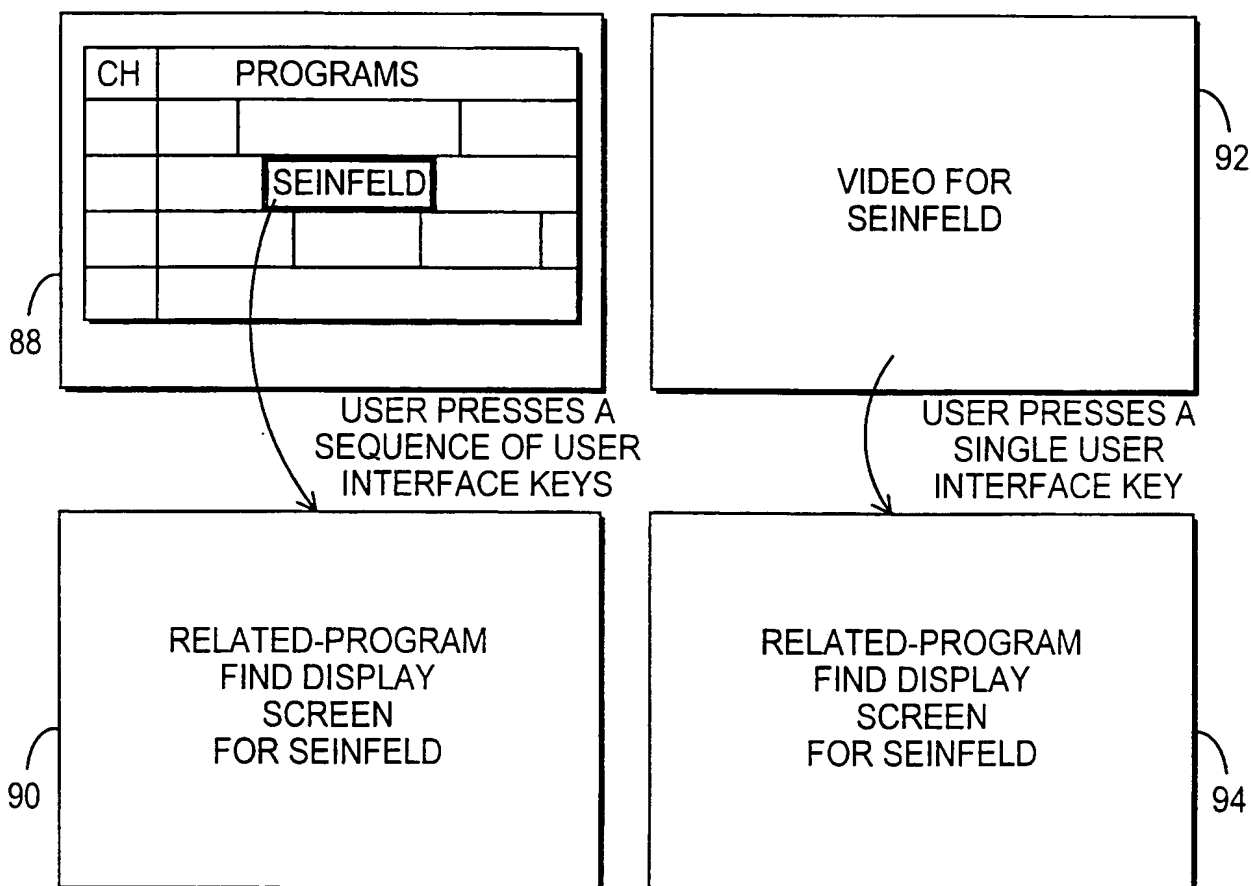


FIG. 3C

FIG. 3B

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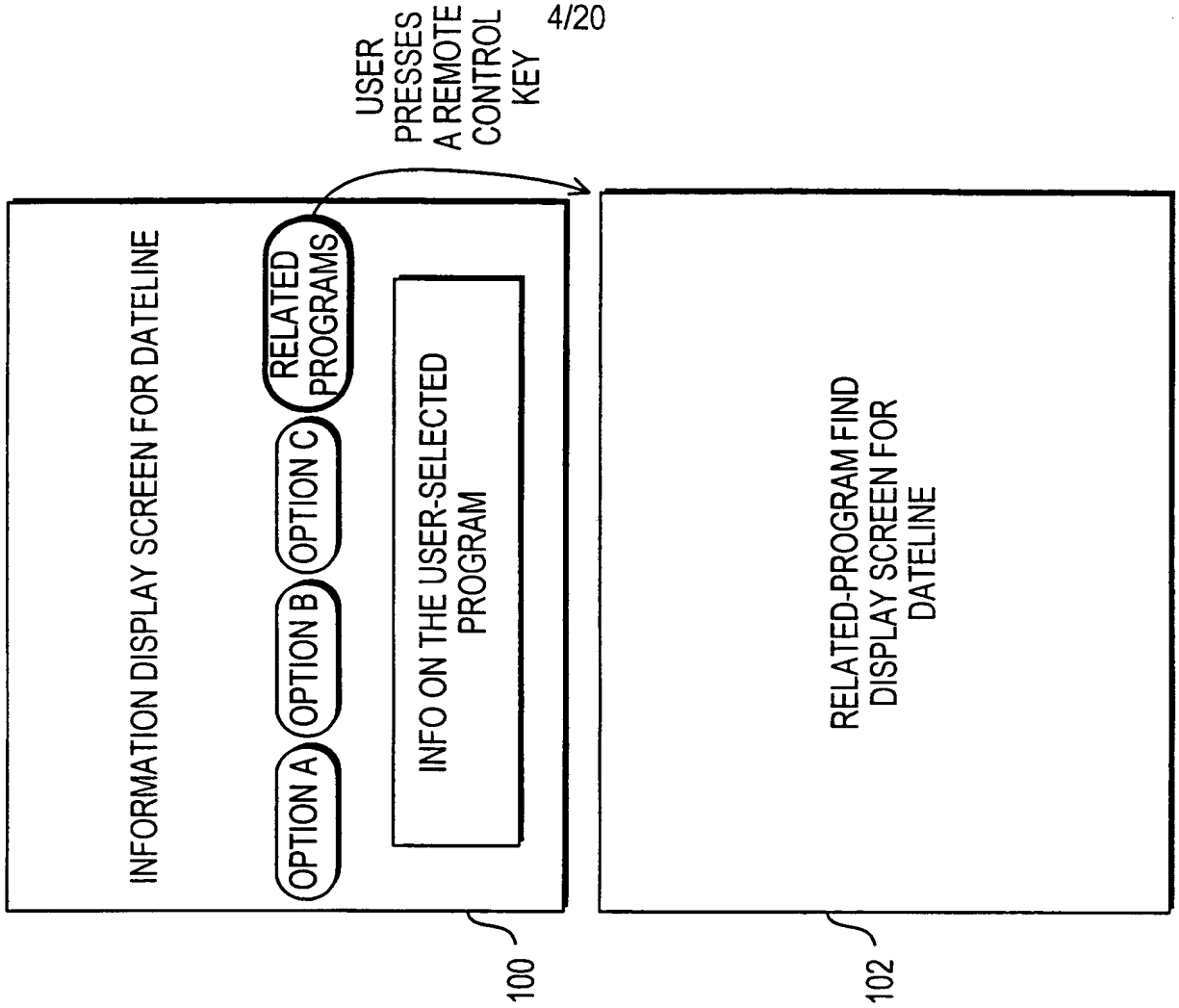


FIG. 3E

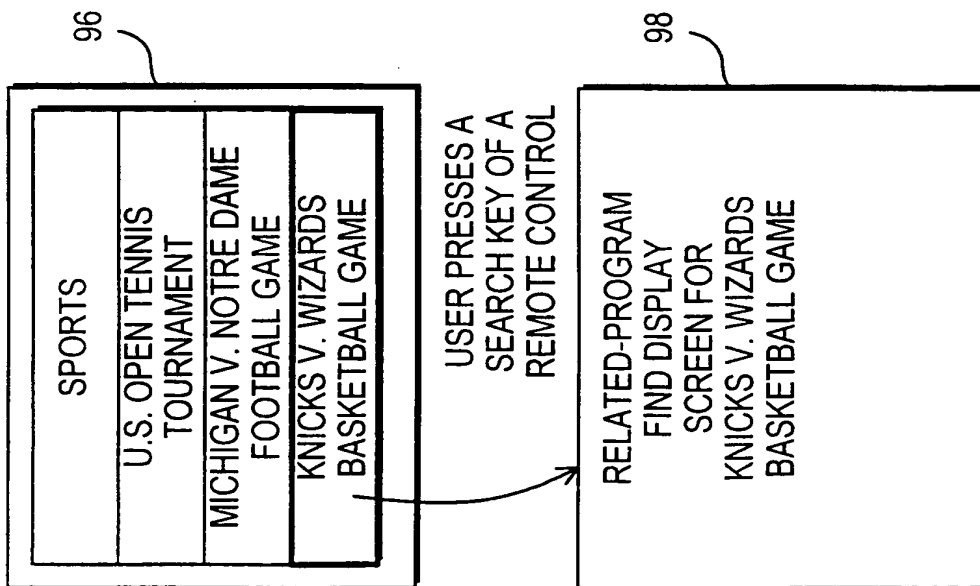


FIG. 3D

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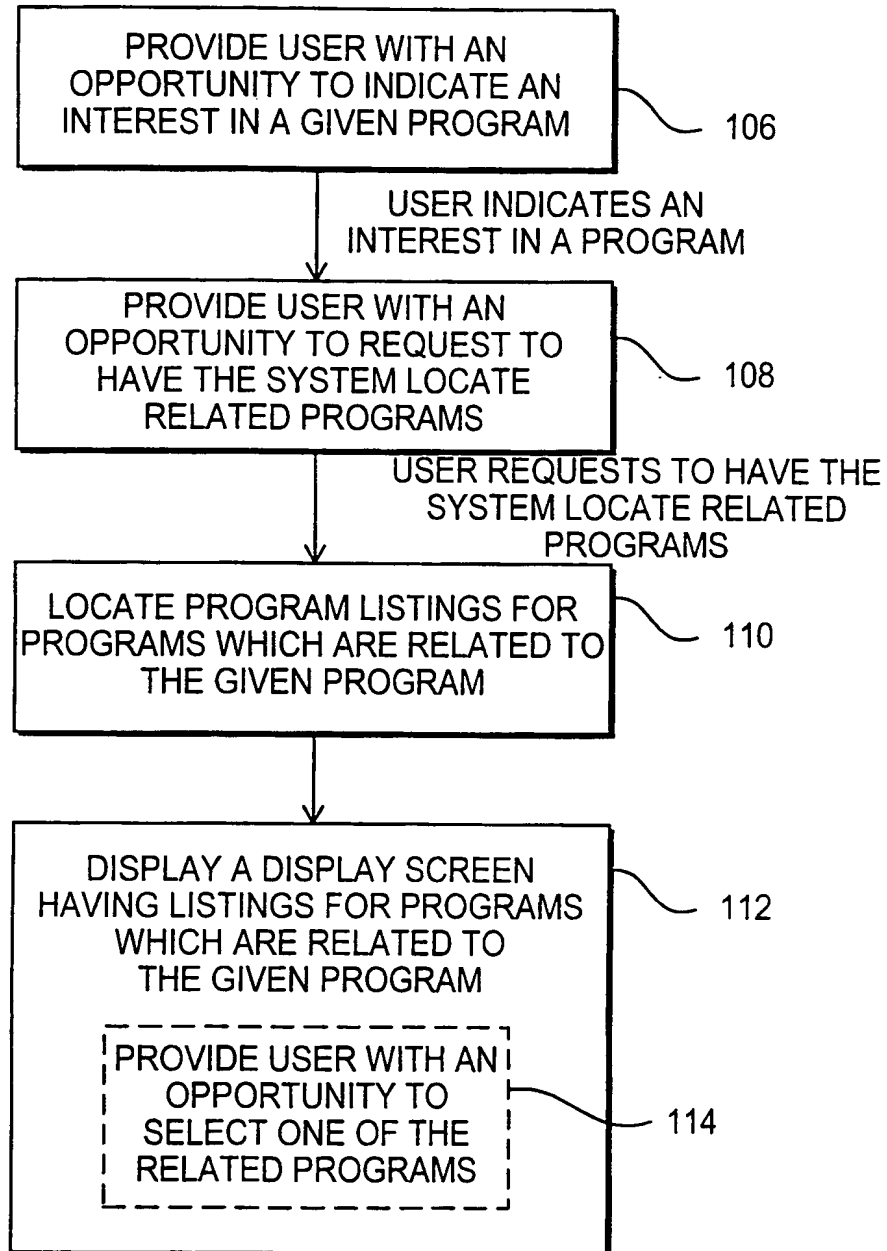


FIG. 4

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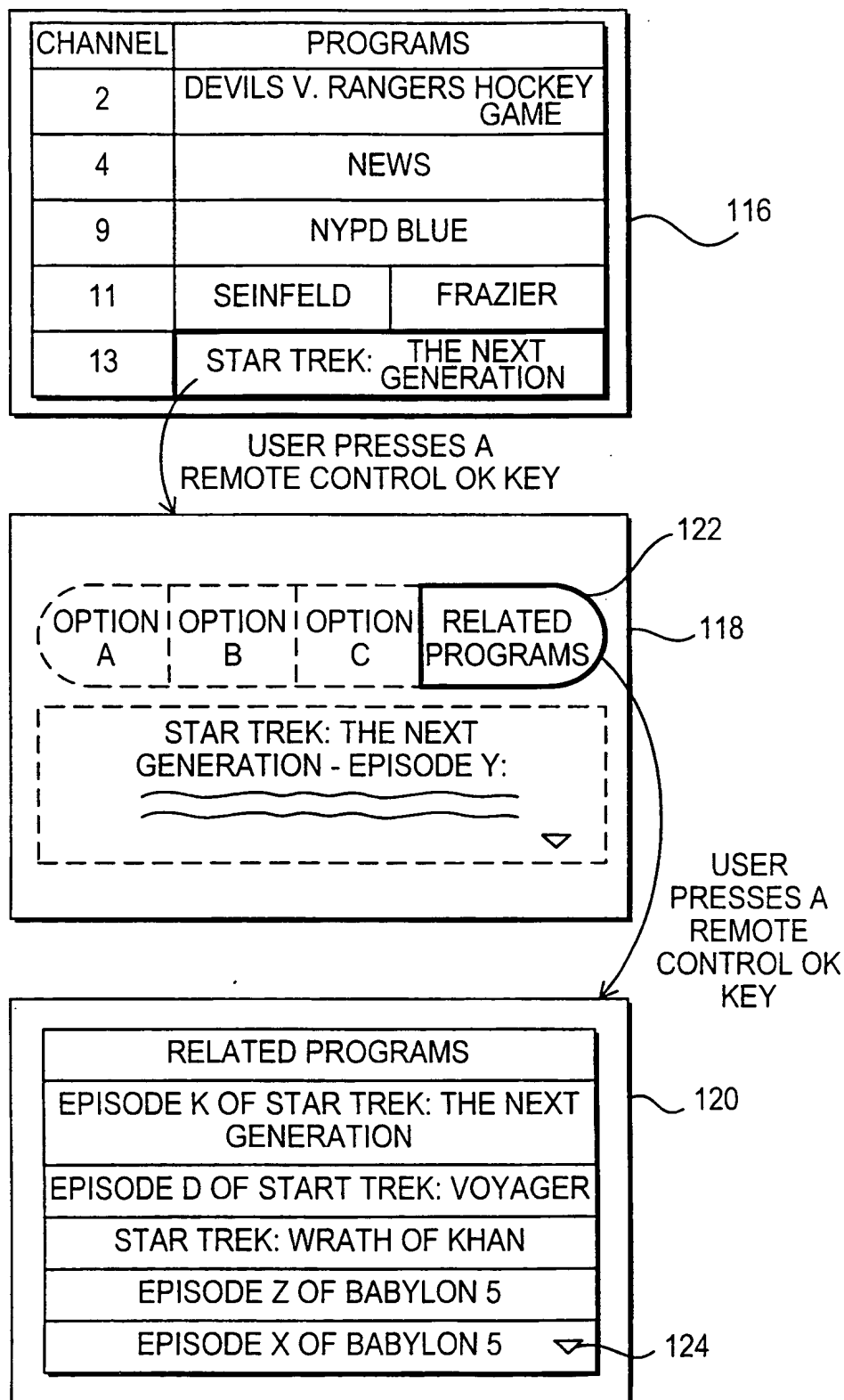


FIG. 5

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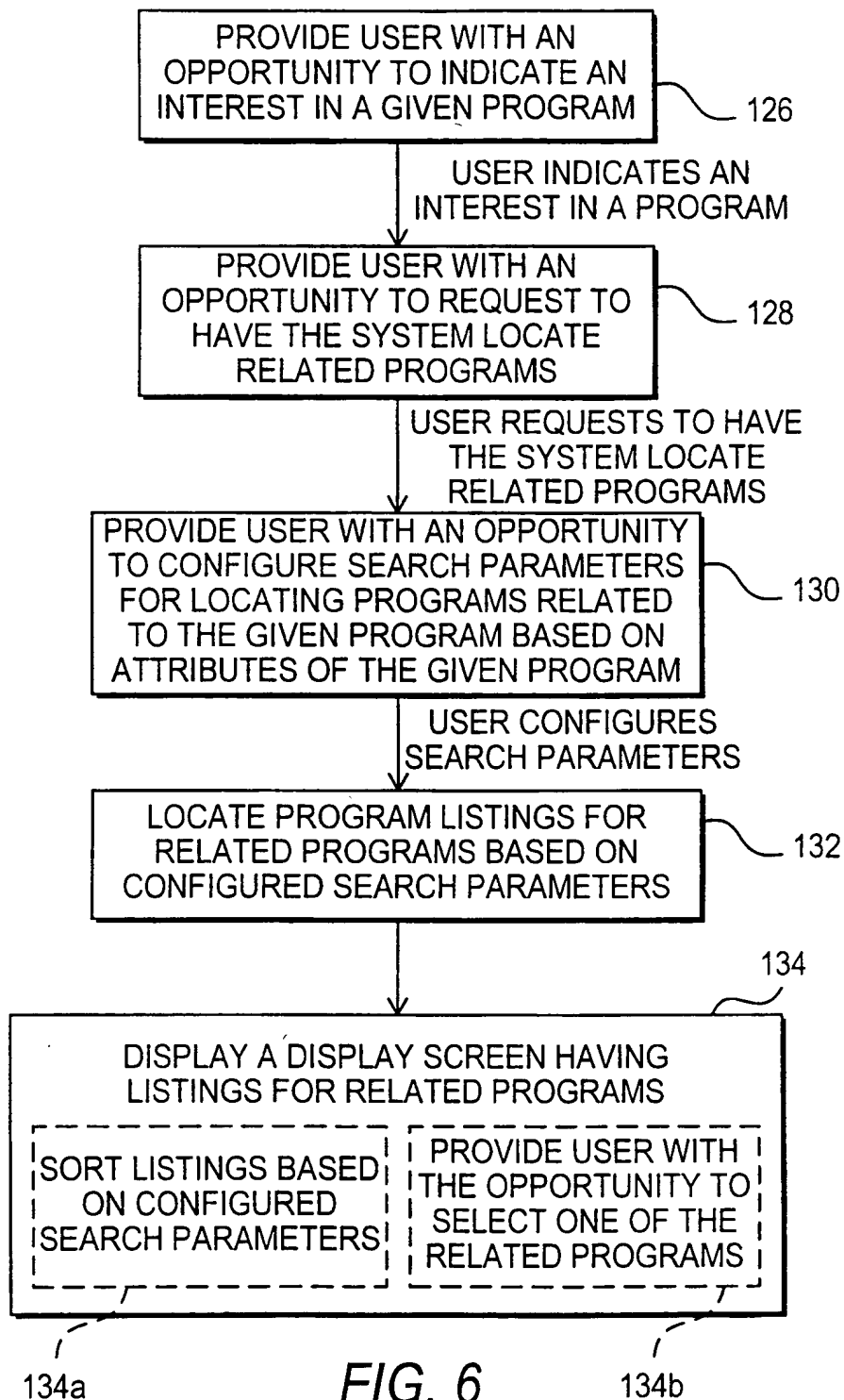
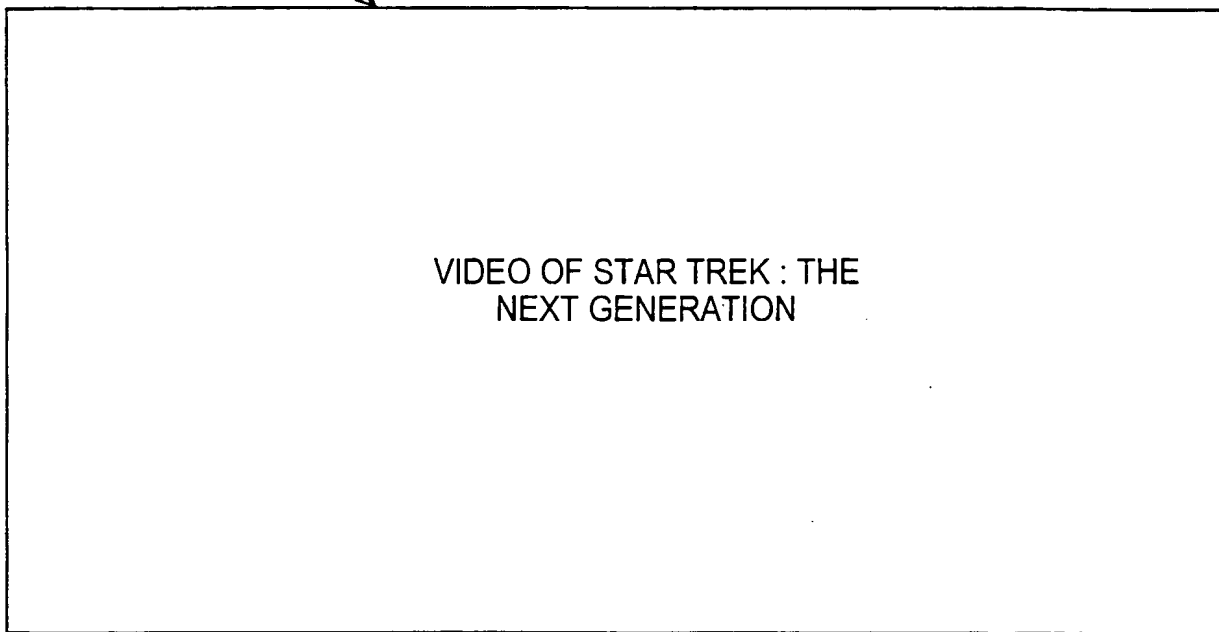


FIG. 6

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USER TUNES TO STAR TREK: THE
NEXT GENERATION



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USER SELECTS A
SINGLE REMOTE
CONTROL KEY

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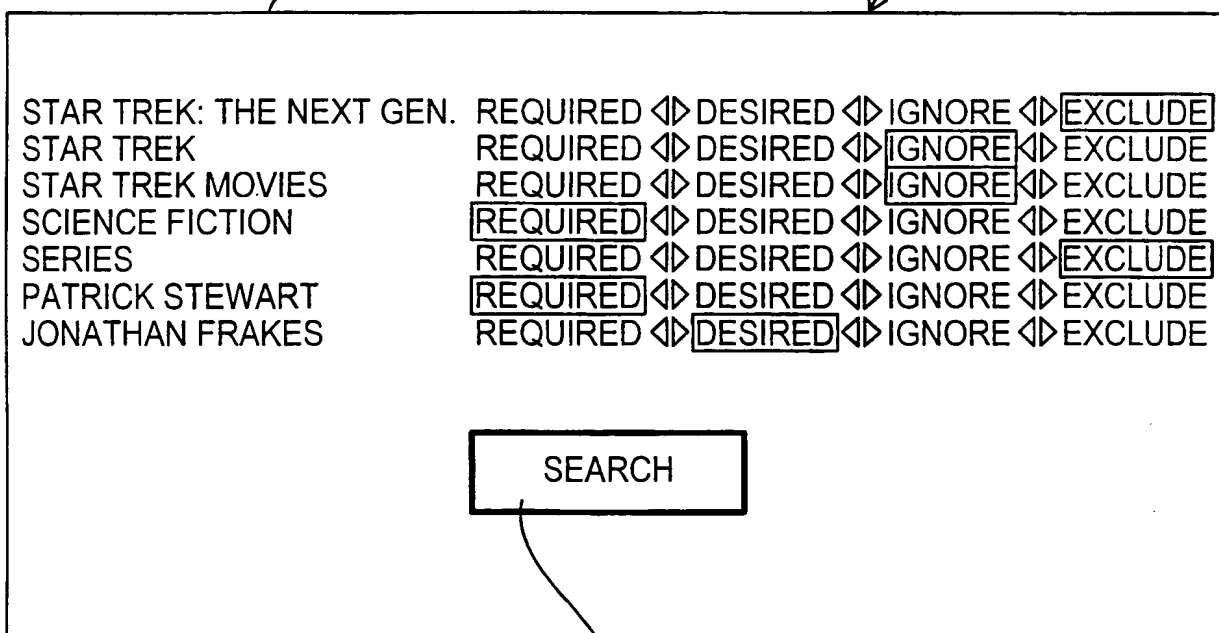
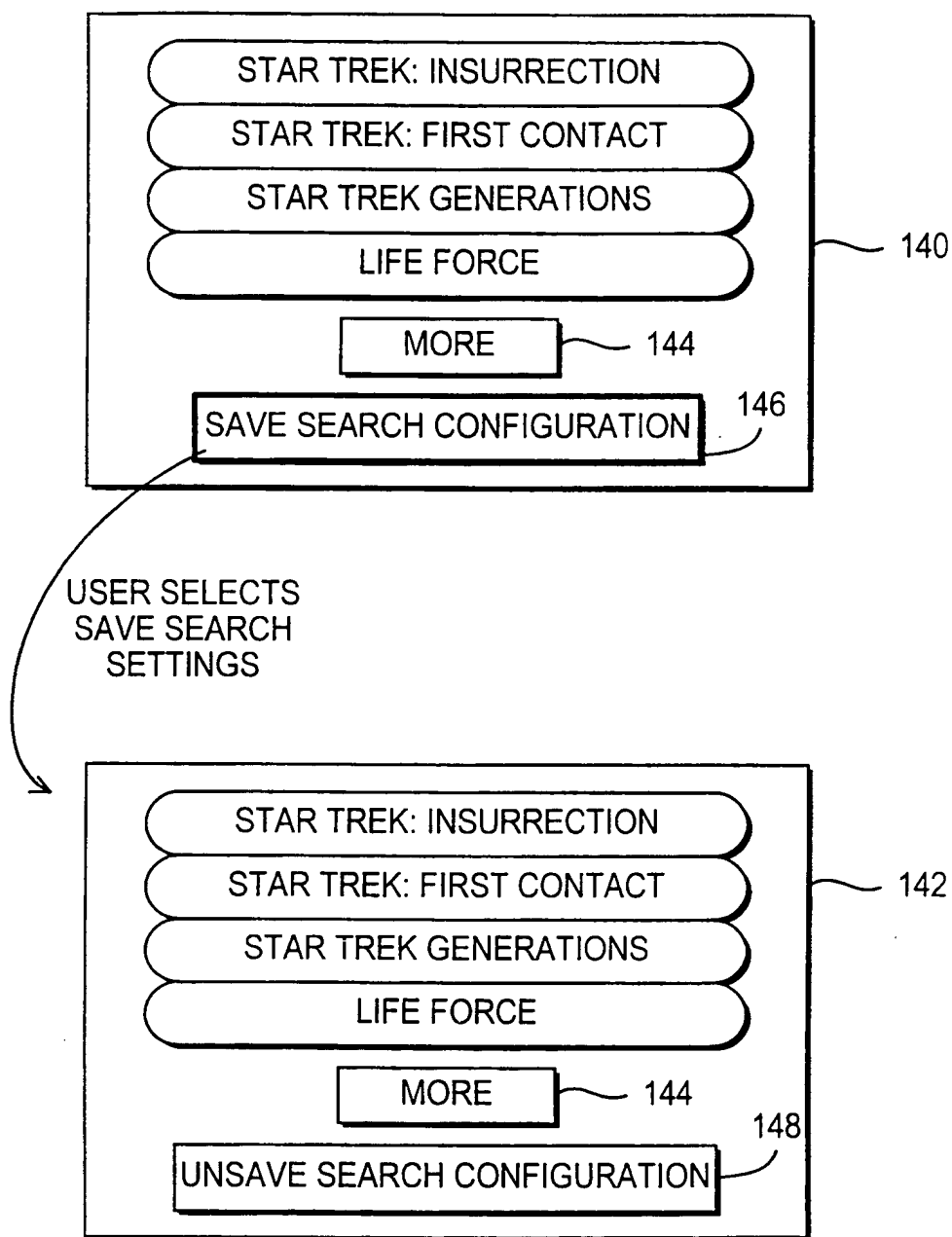


FIG. 7A

USER SELECTS
SEARCH

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*FIG. 7B*

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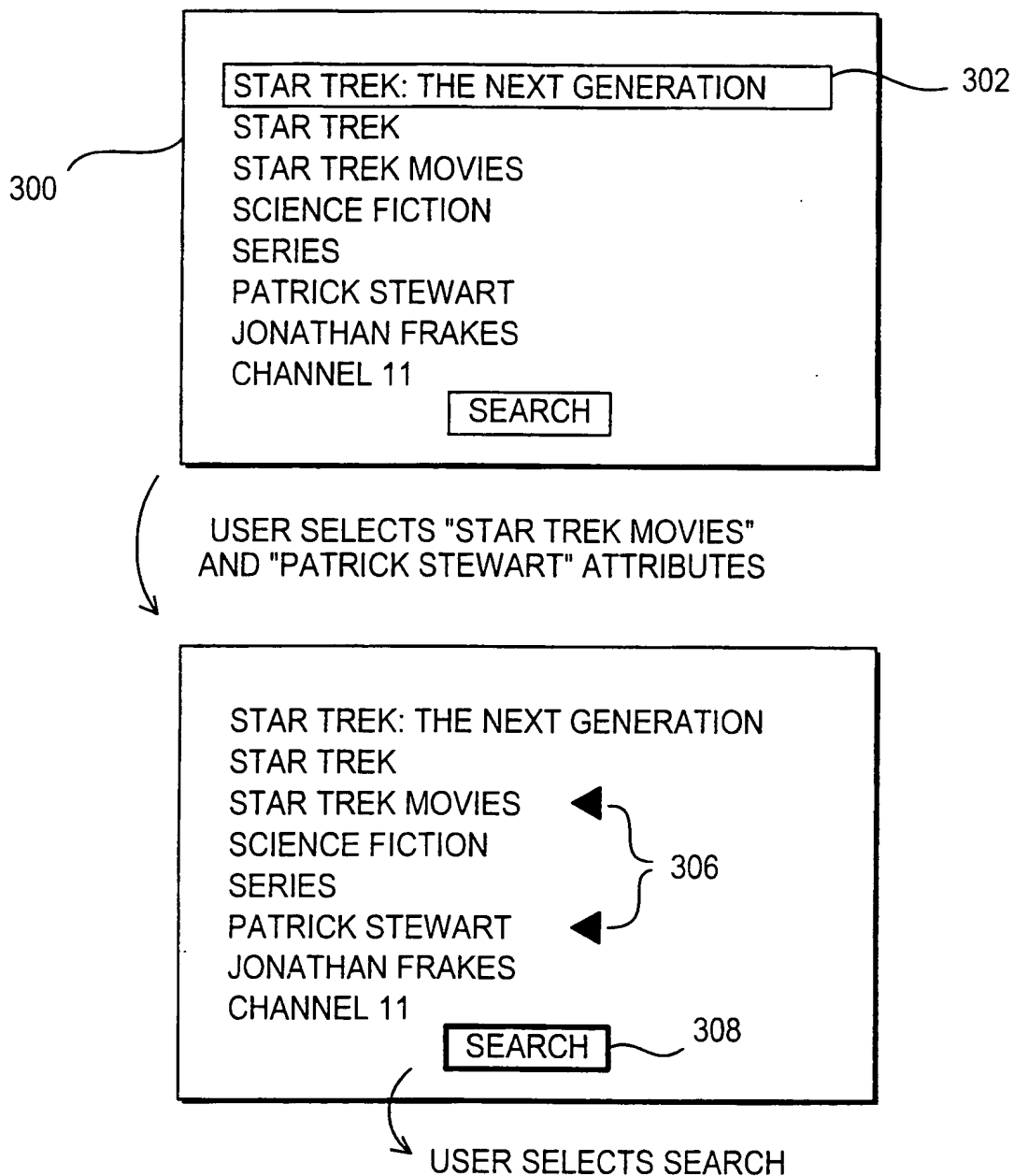


FIG. 7C

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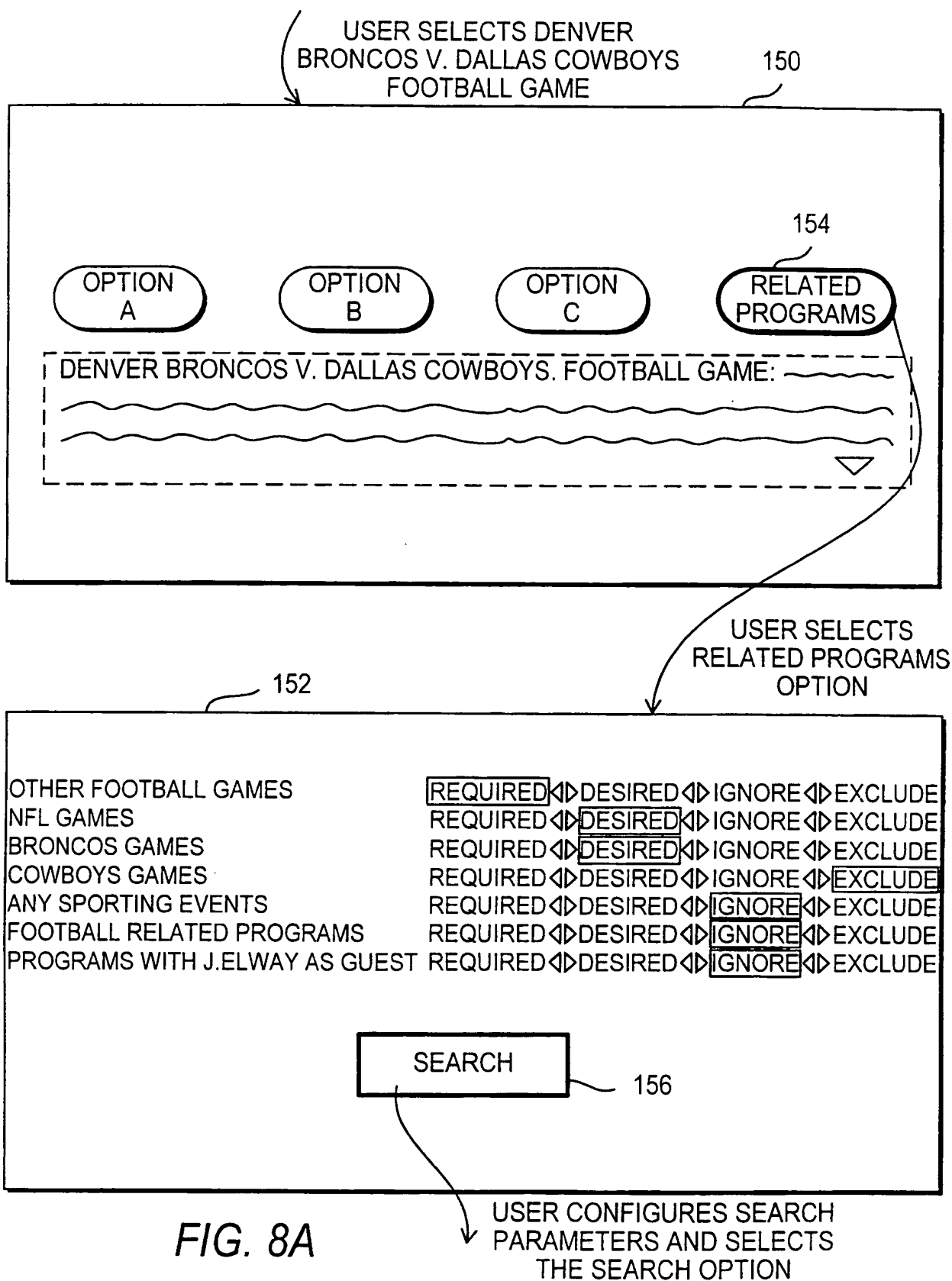


FIG. 8A

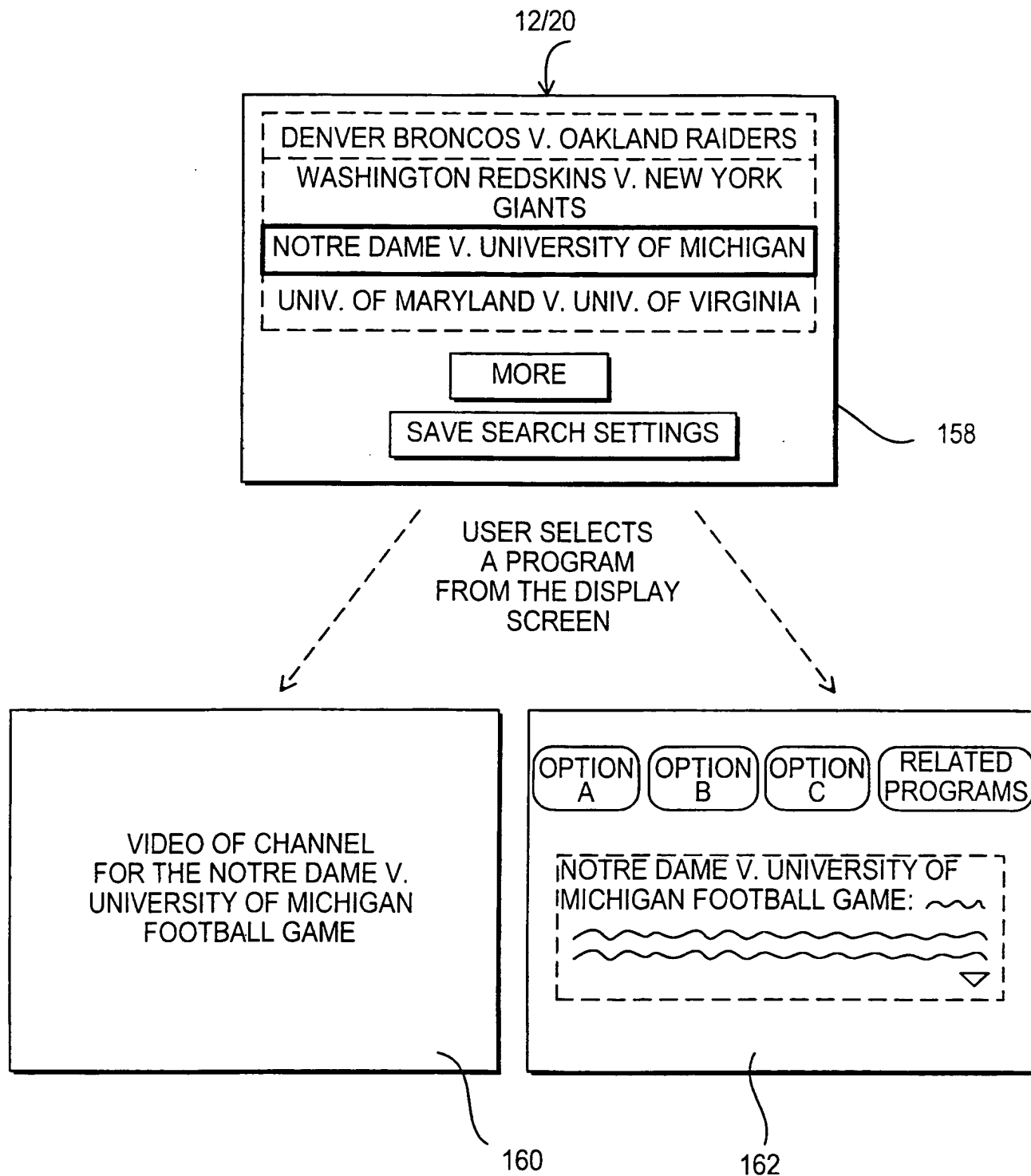


FIG. 8B

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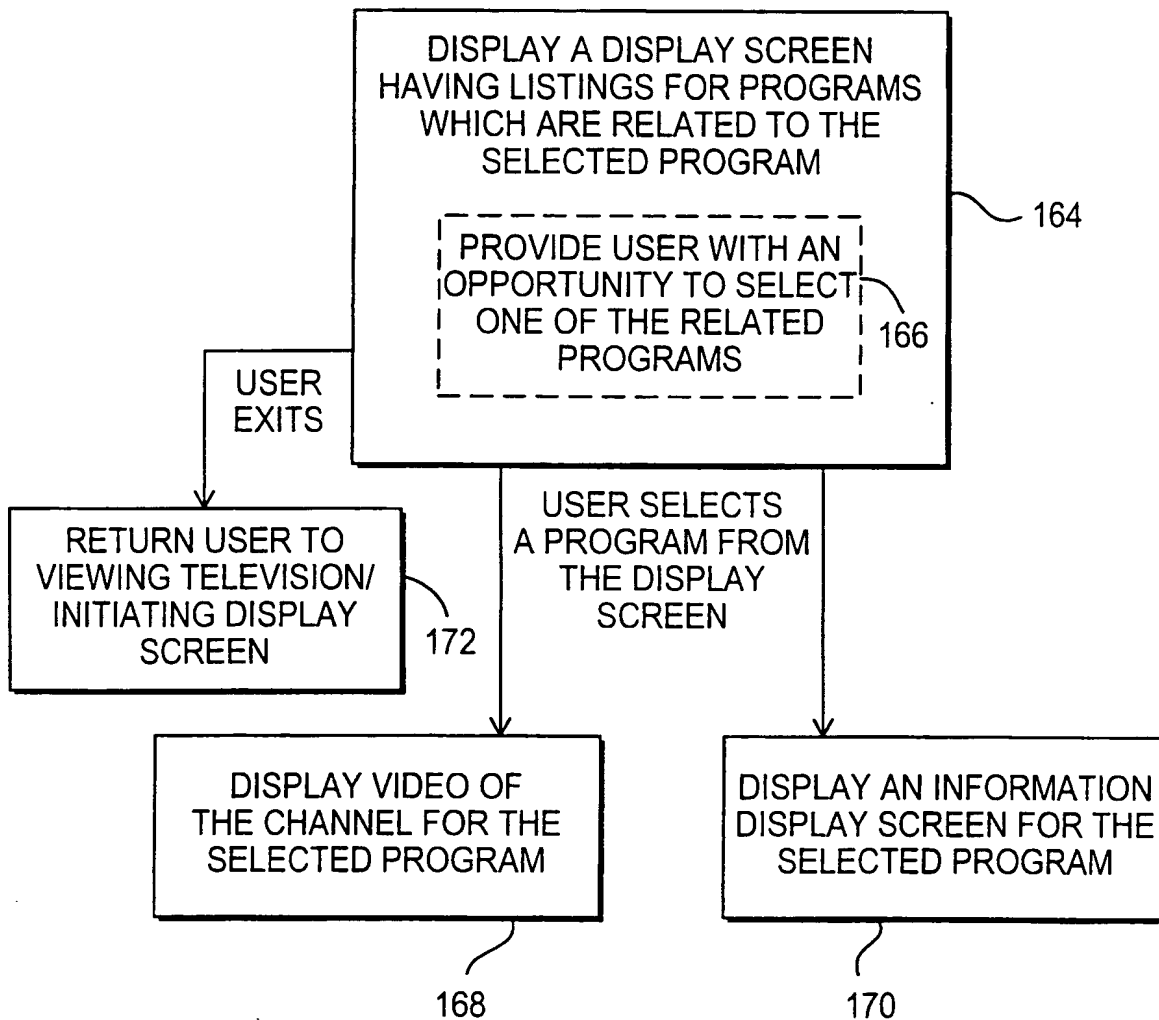


FIG. 9

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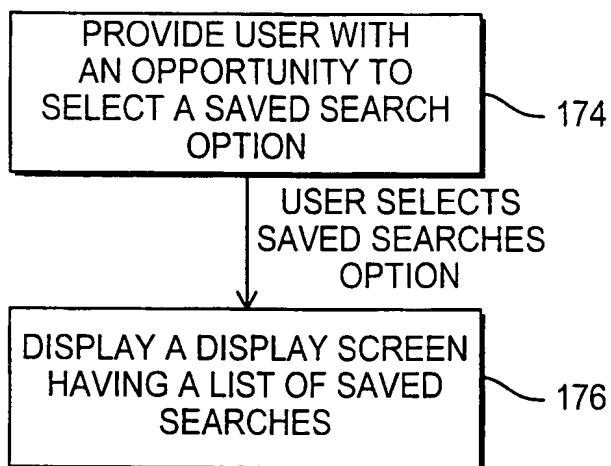


FIG. 10A

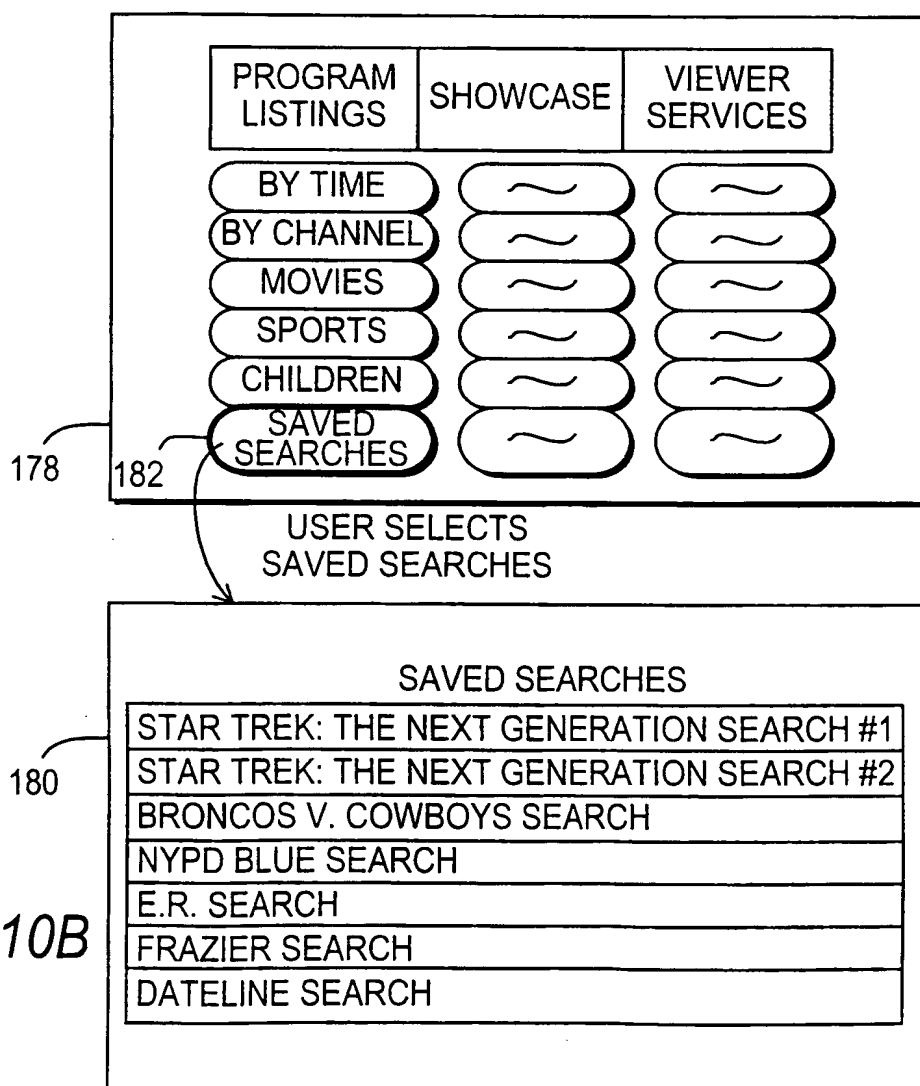


FIG. 10B

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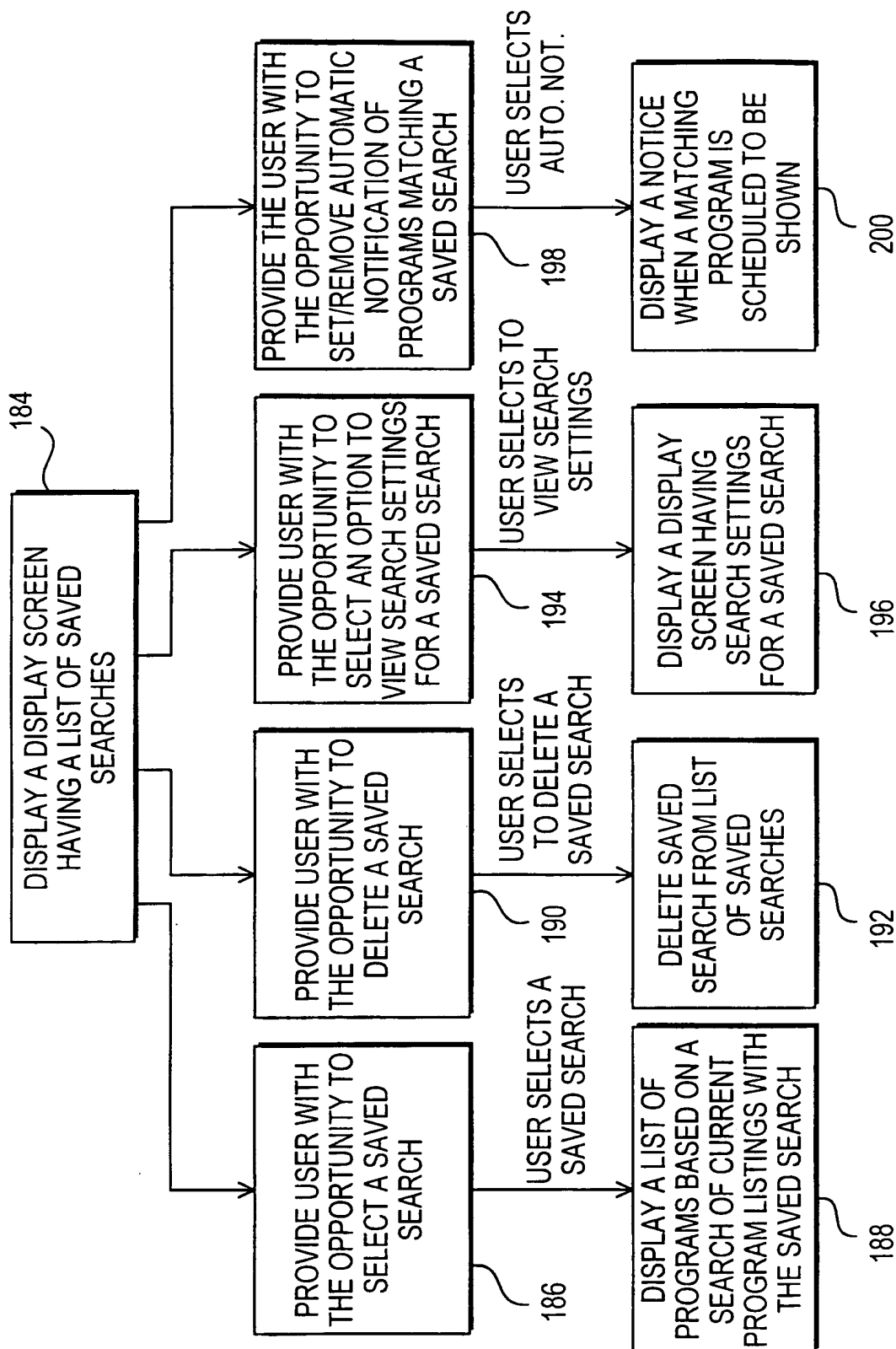


FIG. 11

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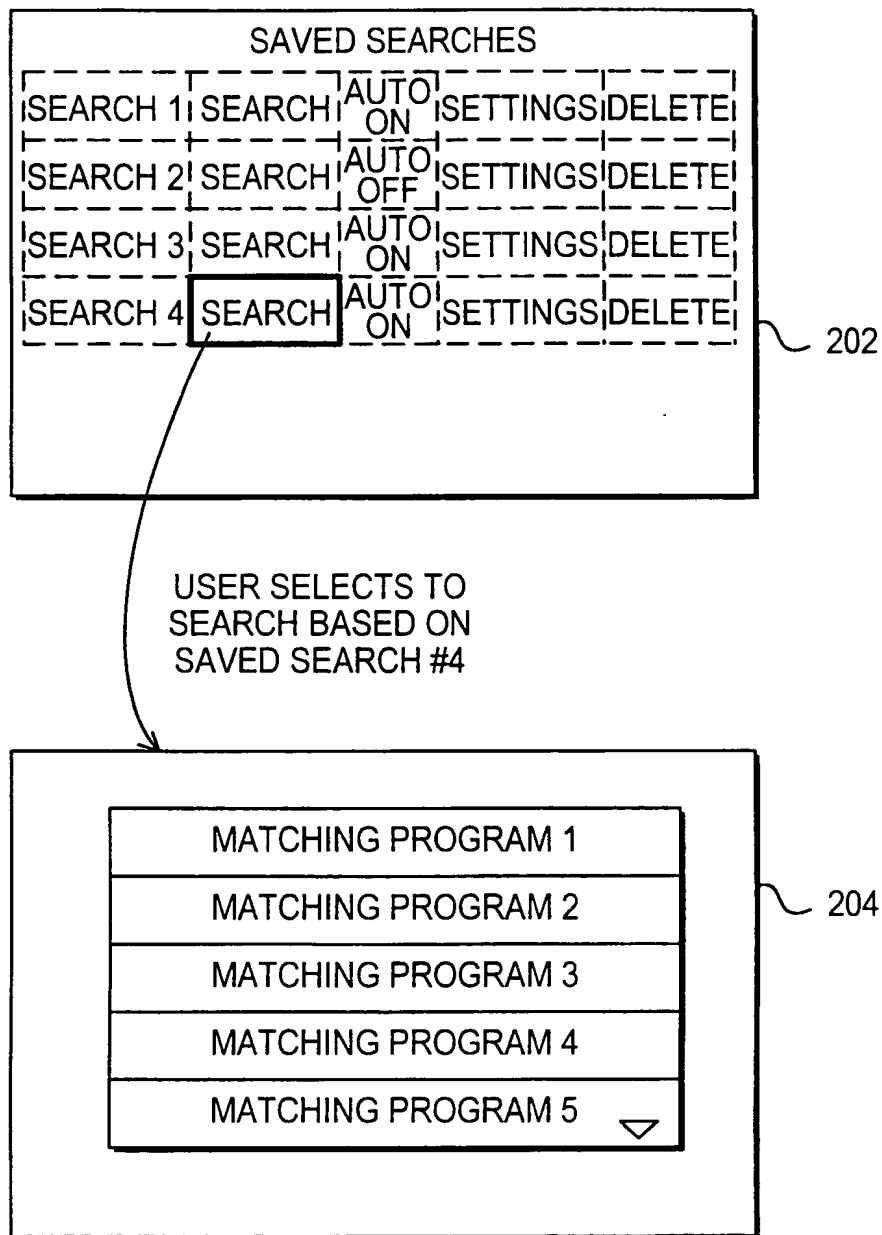


FIG. 12

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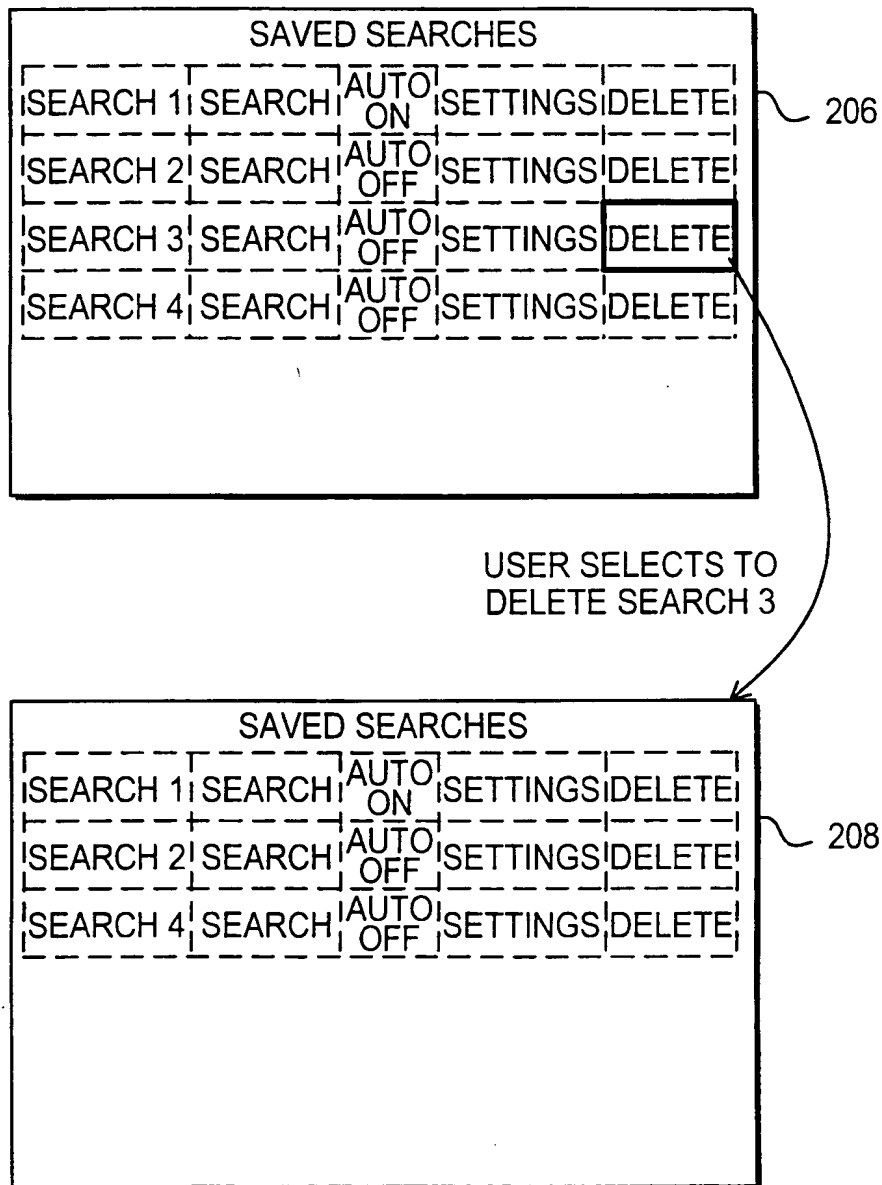


FIG. 13

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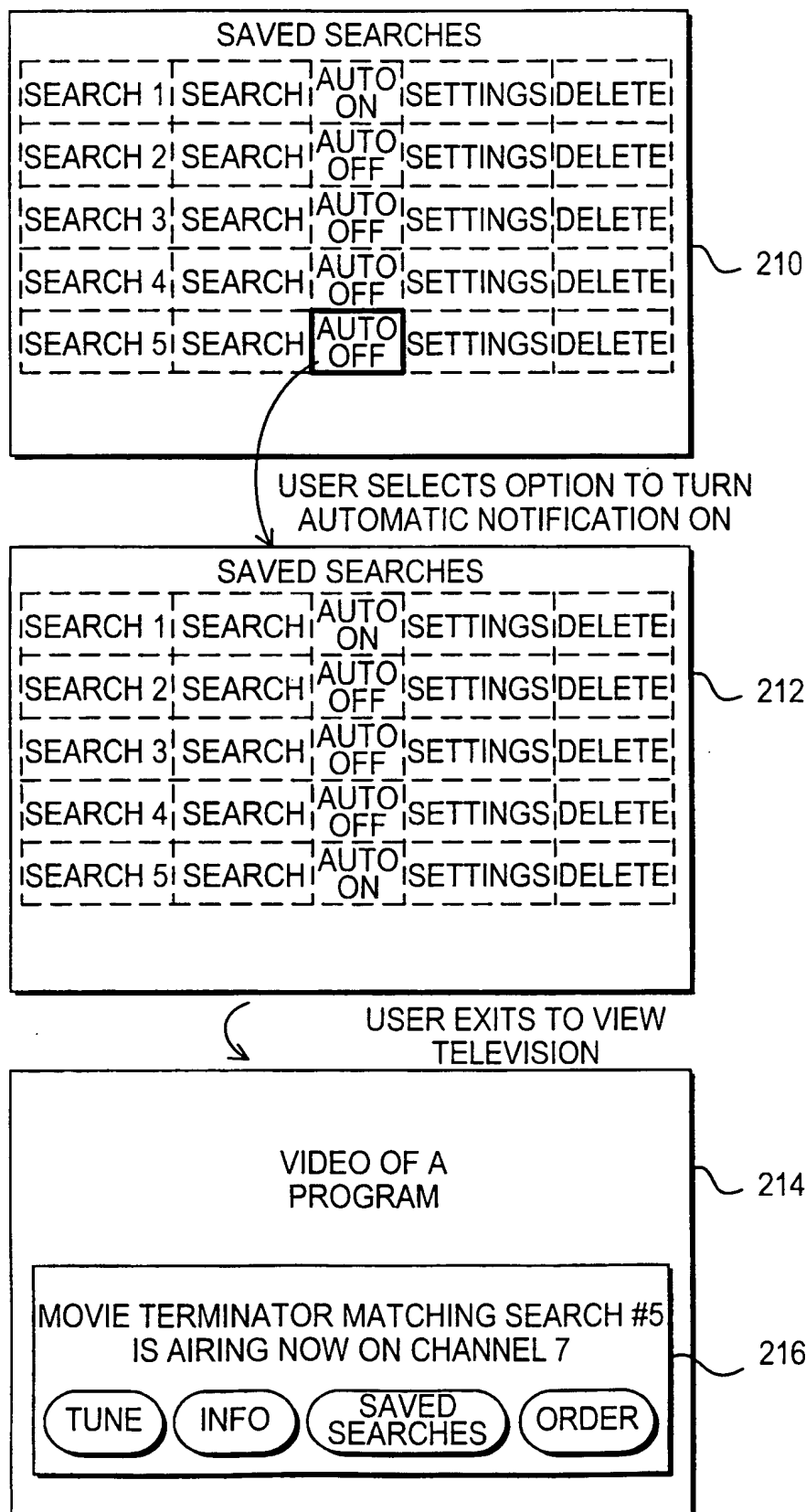


FIG. 14

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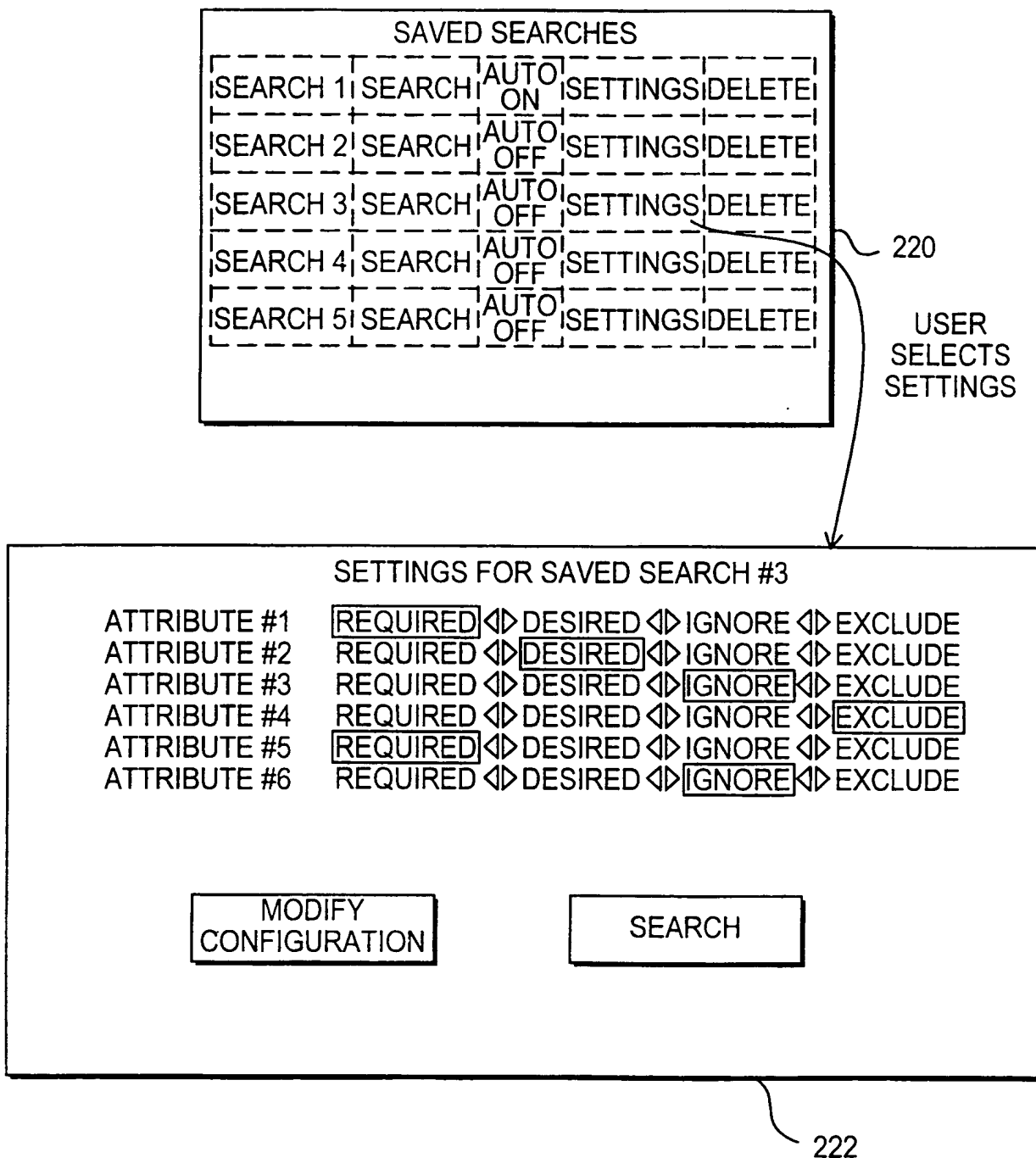


FIG. 15

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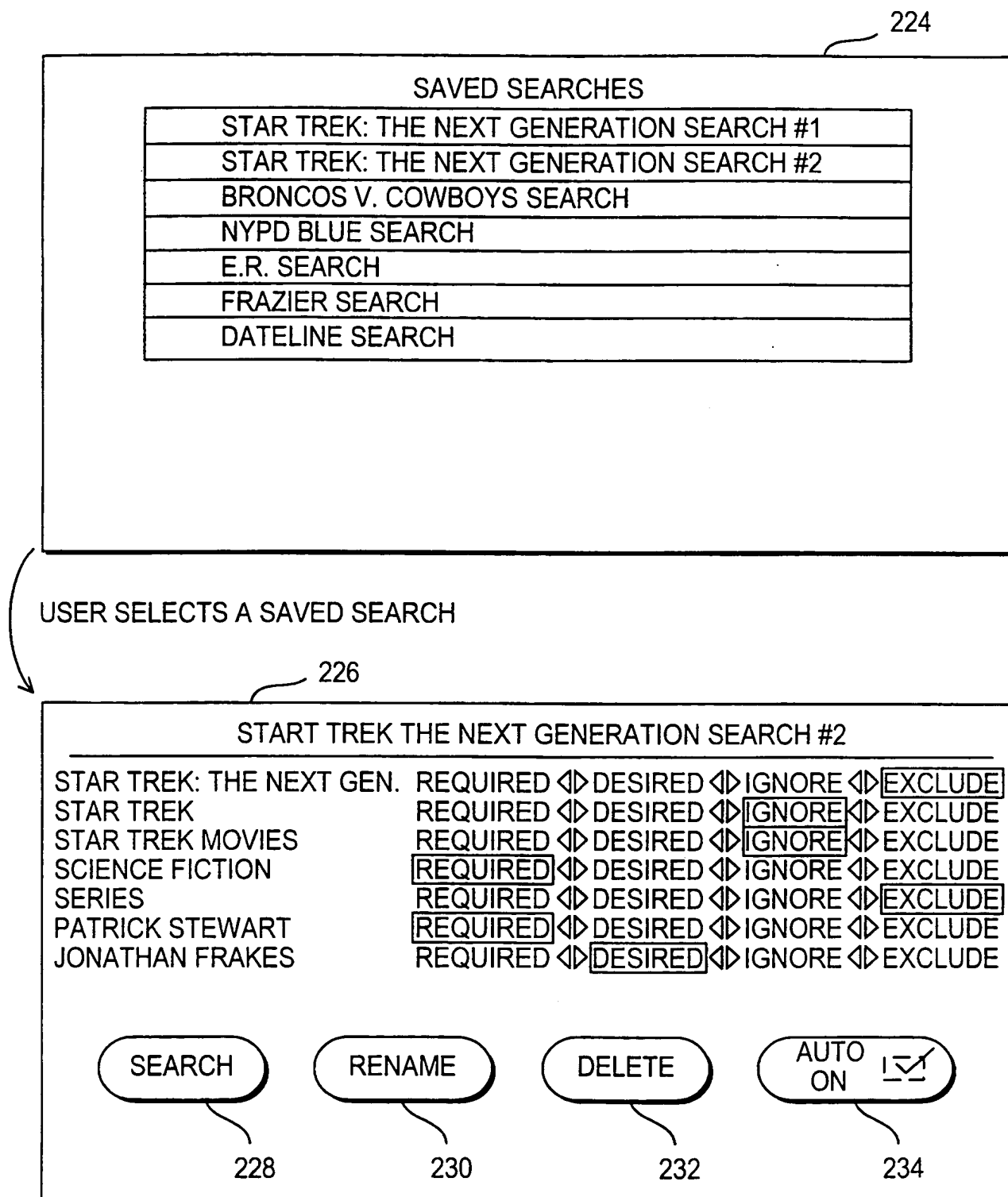


FIG. 16

PCT/US 99/28402

INTERNATIONAL SEARCH REPORT

International / cation No
PCT/US 99/28402

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 721 253 A (SONY ELECTRONICS INC) 10 July 1996 (1996-07-10)	11,18
A	column 2, line 5 -column 3, line 3	14,15, 21,22, 25,33
A	column 6, line 48 -column 7, line 11; figure 4	25,33
A	EP 0 774 866 A (THOMSON CONSUMER ELECTRONICS) 21 May 1997 (1997-05-21) column 1, line 1 - line 41 column 3, line 24 -column 5, line 27; figure 4	11,18, 25,33

INTERNATIONAL SEARCH REPORT

Information on patent family members

International . ication No

PCT/US 99/28402

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			SG 67469 A		21-09-1999
US 5617565	A	01-04-1997	US 5797001 A		18-08-1998
			US 5857181 A		05-01-1999
WO 9748230	A	18-12-1997	AU 3294997 A		07-01-1998
EP 0721253	A	10-07-1996	US 5596373 A		21-01-1997
			BR 9600018 A		21-01-1998
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			BR 9605543 A		11-08-1998
			JP 9200638 A		31-07-1997
			SG 49982 A		15-06-1998

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 June 2000 (08.06.2000)

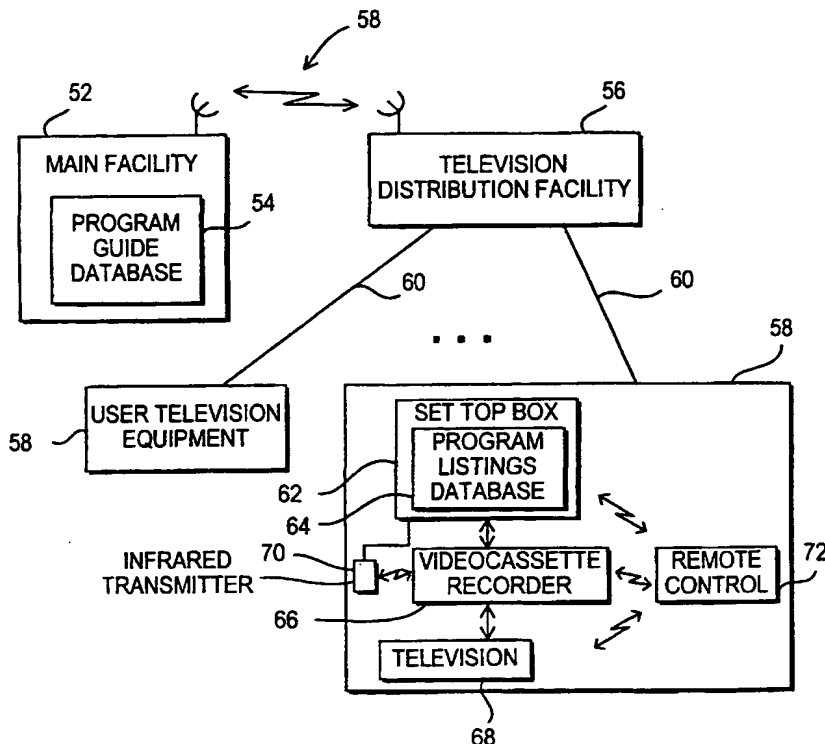
PCT

(10) International Publication Number
WO 00/33573 A1

- (51) International Patent Classification⁷: H04N 5/445 (72) Inventors: HERRINGTON, W., Benjamin; 725 W. 20th Street, Tulsa, OK 74107 (US). ELLIS, Michael, D.; 1300 Kingwood Place, Boulder, CO 80304 (US).
- (21) International Application Number: PCT/US99/28402
- (22) International Filing Date: 30 November 1999 (30.11.1999) (74) Agents: TREYZ, G., Victor et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).
- (25) Filing Language: English (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (26) Publication Language: English
- (30) Priority Data: 60/110,989 3 December 1998 (03.12.1998) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent
- (71) Applicant: UNITED VIDEO PROPERTIES, INC. [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US).

[Continued on next page]

(54) Title: ELECTRONIC PROGRAM GUIDE WITH RELATED-PROGRAM SEARCH FEATURE



(57) Abstract: A system for searching for programs is provided. The system may provide the user with an opportunity to indicate an interest in a given program. The system may provide the user with an opportunity to request that the system locate programs that are related to the given program in which the user has indicated an interest. The system may locate program listings that are related to the given program. The located program listings may be related to the given program based on attributes of the given program. The system may display a list of located listings and allow the user to select listings from the list. The system may tune to a program selected from the list, may display an information display screen for a program selected from the list, etc. The system may provide the user with an opportunity to configure and save search parameters. The system may sort related program listings based on the attributes of the given program. The system may provide the user with the opportunity to retrieve saved searches to locate currently available program listings and the

opportunity to delete a saved search, rename a saved search, receive automatic notifications of programs matching a saved search, etc.

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(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(15) Information about Correction:

see PCT Gazette No. 28/2001 of 12 July 2001, Section II

Published:

— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(48) Date of publication of this corrected version:

12 July 2001

ELECTRONIC PROGRAM GUIDE WITH
RELATED-PROGRAM SEARCH FEATURE

Background of the Invention

This invention relates to interactive
5 television systems such as interactive television
program guide systems, and more particularly, to
techniques for program searching in these systems.

Cable, satellite, and broadcast television
systems provide a large number of television channels.
10 Typically, the number of channels provided by cable and
satellite systems is over a hundred and ever
increasing. Television viewers have traditionally
consulted printed television program schedules to
obtain programing information. More recently,
15 interactive electronic television program guides have
been developed to allow television program information
to be displayed on viewer television equipment.

Interactive electronic television program
guides ("program guides") typically provide program
20 listings for all channels available in the television
system. Some program guides include features for
allowing users to search for programs. Such search

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features are often complex, time-consuming, and cumbersome. For example, such search features may require that a user select search parameters such as preferred programming genres before searching for
5 programs, that a user navigate through several display screens before being allowed to initiate a search, that the user enter at least a portion of a program title to initiate a search, etc.

It is therefore an object of the present
10 invention to provide a television system that includes an improved program searching feature.

Summary of the Invention

These and other objects of the invention are accomplished in accordance with the principles of the
15 present invention by providing a system for searching for programs. The system may provide the user with an opportunity to indicate an interest in a given program. The system may provide the user with an opportunity to request that the system locate programs that are
20 related to the given program in which the user indicated an interest. The system may locate program listings that are related to the given program. The located program listings may be related to the given program based on attributes of the given program.

25 The system may display a list of the located program listings. The system may provide the user with an opportunity to select from the list of related programs. The system may tune to a program selected from the list, may display an information display
30 screen for a program selected from the list, etc.

The system may provide the user with an opportunity to configure search parameters. For example, The system may present the user with a list of

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attributes for the given program and may allow the user to select one or more attributes and may allow the user to select which logical operations (e.g., and/or operations) are to be performed on the attributes. The
5 system may search television program listings and may display a list of related programs based on the selected attributes.

The system may sort related program listings based on the attributes of the given program. The
10 system may provide the user with an opportunity to save search parameters for use at a later time. The system may display a list of previously saved searches and may provide the user with an opportunity to direct the system to locate currently available program listings
15 based on a saved search from the list. The system may locate currently available listings based on the user-selected search parameters from the saved search when the saved search is retrieved. The system may allow the user to delete a saved search. The system may
20 automatically display a notification based on user-selected search parameters from a saved search. The system may provide the user with an opportunity to view the user-selected search parameters for a saved search.

Further features of the invention, its nature
25 and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

Brief Description of the Drawings

FIG. 1 is a diagram of an illustrative
30 interactive television program guide system in accordance with the present invention.

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FIG. 2 is a flow chart of illustrative steps involved in providing program searching in accordance with the present invention.

FIG. 3a is a flow chart of illustrative steps
5 involved in providing an opportunity to request that the system locate programs related to a given program in accordance with the present invention.

FIG. 3b is a diagram of an illustrative
sequence of illustrative display screens for providing
10 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3c is a diagram of an illustrative
sequence of illustrative display screens for providing
15 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3d is a diagram of an illustrative
sequence of illustrative display screens for providing
20 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 3e is a diagram of an illustrative
sequence of illustrative display screens for providing
25 an opportunity to request that the system locate programs that are related to a given program in accordance with the present invention.

FIG. 4 is a flow chart of illustrative steps
involved in displaying program listings that are
30 related to a given program in accordance with the present invention.

FIG. 5 is a diagram of an illustrative
sequence of illustrative display screens for displaying

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program listings that are related to a given program in accordance with the present invention.

FIG. 6 is a flow chart of illustrative steps involved in displaying program listings that are
5 related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7a is a diagram of an illustrative sequence of illustrative display screens for searching
10 for program listing that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7b is a diagram of an illustrative sequence of illustrative display screens for displaying
15 program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 7c is a diagram of an illustrative sequence of illustrative display screens for searching
20 for program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 8a is a diagram of an illustrative sequence of illustrative display screens for searching
25 for program listings that are related to a given program based on user-selected search parameters in accordance with the present invention.

FIG. 8b is a diagram of an illustrative sequence of illustrative display screens for selecting
30 a program listing that is related to a user-selected program in accordance with the present invention.

FIG. 9 is a flow chart of illustrative steps involved in providing display screens when a user makes

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selections from a related-program find display screen in accordance with the present invention.

FIG. 10a is a flow of illustrative steps involved in displaying a display screen having a list of saved searches in accordance with the present invention.

FIG. 10b is a diagram of an illustrative sequence of illustrative display screens for providing a display screen having a list of saved searches in accordance with the present invention.

FIG. 11 is flow chart of illustrative involved in providing saved search features in accordance with the present invention.

FIG. 12 is a diagram of an illustrative sequence of illustrative display screens for searching for program listings based on a saved search in accordance with the present invention.

FIG. 13 is a diagram of an illustrative sequence of illustrative display screens for deleting a saved search in accordance with the present invention.

FIG. 14 is a diagram of an illustrative sequence of illustrative display screens for providing an automatic notification of a program matching a saved search in accordance with the present invention.

FIG. 15 is a diagram of an illustrative sequence of illustrative display screens for displaying search parameters for a saved search in accordance with the present invention.

FIG. 16 is a diagram of an illustrative sequence of illustrative display screens for providing save search features in accordance with the present invention.

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Detailed Description of the Preferred Embodiments

An illustrative interactive television program guide system 50 in accordance with the present invention is shown in FIG. 1. Main facility 52 includes a program guide database 54 for storing program guide information (e.g., television program listings data, program-related information, service listings data, service-related information, pay-per-view ordering information, television program promotional information, etc.).

Main facility 52 preferably includes a processor to handle information distribution tasks. Information from database 54 may be transmitted in parallel via communications links such as communications link 58 to multiple television distribution facilities such as television distribution facility 56. Only one television distribution facility is shown in FIG. 1 to avoid over complicating the drawings. Each communications link 58 may be a satellite link, a telephone network link, a combination of such links, or another suitable communications path. Text, graphics, and video data signals may be transmitted over link 58. If it is desired to transmit video signals over communications link 58, a relatively high bandwidth link such as a satellite link is generally preferable to a relatively low bandwidth link such as a telephone line.

Television distribution facility 56 is a facility such as a cable system headend, a broadcast distribution facility, or a satellite television distribution facility for distributing television signals to viewers.

The program guide information transmitted by main facility 52 to television distribution facility 56

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includes television program listings data such as program times, channels, titles, descriptions, program type, genre, actors, etc. Transmitted program guide information may include pay program data such as
5 pricing information for individual programs and subscription channels, time windows for ordering programs and channels, telephone numbers for placing orders that cannot be impulse ordered, etc.

Television distribution facility 56 may
10 distribute program guide information received from main facility 52 to user television equipment 58 via communications paths 60. User television equipment 58 may be any suitable equipment for providing television that contains sufficient processing capabilities to
15 monitor viewing activities, analyze these activities and display appropriate program listings information for the user.

Communications paths 60 may be cable links, fiber optic links, satellite links, broadcast links, or
20 other suitable link, or a combination of such links. Any suitable communications scheme may be used to transmit data over paths 60, including in-band transmissions, out-of-band transmissions, digital transmissions, analog transmissions, cable
25 transmissions, satellite transmissions, over-the-air transmissions, multichannel multipoint distribution services (MMDS) transmissions, etc.

Communications paths 60 preferably have sufficient bandwidth to allow television distribution
30 facility 56 to distribute television programming, program listings information, advertisements, and other information to user television equipment 58. Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to user television

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equipment 58 via communication paths 60. If desired, some of the data may be distributed to user television equipment 58 by one or more distribution facilities that are separate from television distribution facility 56 using communication paths that are at least partly separate from communication paths 60.

The data distribution technique that is used to distribute data on paths 60 may depend on the type of information that is being distributed. For example, text and graphics may be distributed over an out-of-band channel using an out-of-band modulator or distributed in the vertical blanking interval lines of an analog video channel. Video information may also be distributed in this way, although large quantities of video information may be more efficiently distributed using one or more digital channels or streams on paths 60. Such digital channels or streams may also be used for distributing text and graphics.

Each user television equipment device 58 has a receiver which is typically a set-top box such as set-top box 62. The receiver may also be other suitable television equipment such as an advanced television receiver into which circuitry similar to set-top-box circuitry has been integrated or a personal computer television (PC/TV). For illustrative purposes, the present invention will be described in the context of user television equipment 58 that uses set-top boxes.

Each set-top box 62 is typically connected to an optional videocassette recorder 66 so that selected television programs may be recorded. Videocassette recorder 66 is typically connected to a television 68. To record a program, set-top box 62 tunes to a particular channel and sends control signals to

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videocassette recorder 66 (e.g., using infrared transmitter 70) that instructs videocassette recorder 66 to start and stop recording at the appropriate times.

5 Television program listings, advertisements, programming information, and other information may be displayed on television 68. Each set-top box 62, videocassette recorder 66, and television 68 can be controlled by one or more remote controls 70 or any
10 other suitable user input interface, such as a wireless keyboard, mouse, trackball, dedicated set of buttons, touch screen display remote, etc. Remote controls, such as remote control 70, have various buttons that can be pressed by the user such as arrow keys (e.g.,
15 for directing on-screen movement of a highlight region, for directing scrolling functions, etc.), an OK, select, enter, or other such selection key for making a selection (hereinafter referred to as an OK key), channel number keys (for selecting a television
20 channel), a favorites key (to invoke functions related to user preferences), a delete key (to delete menu items or to express a disinterest in certain user preferences), an information key for receiving information on a program (hereinafter referred to as an
25 INFO key), a specific feature key (e.g., a related-program search key to invoke program searching), etc. For illustrative purposes, many aspects of the present are discussed primarily in the context of a user interface being a remote control.

30 Certain program guide features, such as pay program purchasing, the purchasing of products or services, and data collection functions, may require that user television equipment 58 transmit data to television distribution facility 56 over communications

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paths 60. If desired, such data may be transmitted over telephone lines or other separate communications paths. If features such as these are provided using facilities separate from television distribution
5 facility 56, some of the communications involving user television equipment 58 may be made directly with the separate facility (not shown).

If desired, an interactive television program guide system may be implemented using a data-relay
10 architecture. In such an architecture, television distribution facility 56 may serve as a data relay site and user television equipment 58 may be a data destination site. For example, as television distribution facility 56 receives information from main
15 facility 52, television distribution facility 56 may continuously or periodically distribute information to user television equipment 58. In a data-relay architecture, a program guide implemented on user television equipment 58 may use a database (e.g.,
20 database 64) for storing program guide information at user television equipment. Program guide information may include program listings and program attributes. Program attributes may be information such as program title, program actors, program duration, program genre
25 (e.g., sports, comedy, movies, etc.), program channel, scheduled program duration, program rating (e.g., TV-G, PG-13, etc.), program content rating (or critics' rating or star rating, e.g., one star, two stars, etc.) and other related parameters that can be tagged to a
30 program. Television distribution facility 56 may also poll set-top boxes periodically for certain information (e.g., pay program account information or information regarding programs that have been purchased and viewed using locally-generated authorization techniques).

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The features of the present invention may be implemented in a client-server arrangement or in a combination client-server and data-relay arrangement. In such arrangements, the server (e.g., television
5 distribution facility 56) may include a database that may include program listing information.

For clarity, the present invention is sometimes described primarily in the context of program guides that are implemented on user television
10 equipment rather than in the context of program guides that are implemented partially on a server and partially on user television equipment or a more fully server-based architecture.

Each set-top box 62 preferably contains a
15 processor to handle tasks associated with implementing an application on the set-top box 62 that assists the user in searching for programs. For example, a stand-alone application may be provided that supports program searching, as described more fully below. If desired,
20 these tasks may be implemented using a program guide application. For clarity, the present invention will be described primarily in the context of such a program guide application and in the context of a program guide system.

25 Illustrative steps involved in providing program searching in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 2. Initially at step 80, the program guide may provide a user with an
30 opportunity to request that the system locate programs that are related to a particular program (e.g., a program in which the user has indicated an interest using the system). The program guide may, at step 82, display a list of programs that are related to the

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particular program when the user requests that the system locate programs that are related to the particular program. The program guide may include programs in the list based on criteria, such as whether
5 a program is related in attribute to the particular program, whether a program is a sequel or prequel of the particular program, whether a program is in the same program series as the particular program, whether a program is a series that is related to the particular
10 program, whether a program is related the user-selected program in content or subject matter, whether a program has the same actor(s), director, category, theme, or production year as the user-selected program, etc.

Illustrative steps involved in providing a
15 user with an opportunity to request that a system locate programs related to a given program in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 3a. At step 84, the program guide may provide
20 a user with an opportunity to indicate an interest in a given program. The user may indicate an interest in the given program by, for example, positioning a highlight region on a program listing for the given program, tuning the system to the given program,
25 selecting that an information display screen for the given program be displayed, etc. At step 86, the program guide may provide the user with an opportunity to request that the system locate programs that are related to the given program.

30 Illustrative display screens of FIG. 3b, FIG. 3c, FIG. 3d, and FIG. 3e may be provided based on the illustrative steps of FIG. 3a. As shown in FIG. 3b, the program guide may display related program find display screen 94 for the program Seinfeld when a user

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presses a single user interface key while a video for Seinfeld is displayed in display screen 92. The single user interface key may, for example, be a search key of a remote control for requesting that the system locate
5 related programs.

If desired, as shown in FIG. 3c, the program guide may display related-program find display screen 90 for the program Seinfeld when the user presses a predetermined sequence of user interface keys after
10 navigating a highlight region on a listing for Seinfeld in program listings display screen 88. The predetermined sequence of user interface keys may, for example, be pressing a search key and an OK key of a remote control.

15 A sequence of keys may be used when the user interface device (e.g., a remote control) does not have a key dedicated to providing the user with an opportunity to request that the system locate related programs.

20 If desired, as shown in FIG. 3d, the program guide may display related-program find display screen 98 for the Knicks v. Wizards basketball game when the user presses a search key of a remote control after navigating a highlight region on the listing for the
25 Knicks v. Wizards basketball game in sports category program listings display screen 96.

If desired, as shown in FIG. 3e, the program guide may display related-program find display screen 102 for Dateline when a user presses a remote control
30 OK key after navigating a highlight region on related programs option 104 of information display screen 100 for Dateline. The program guide may have displayed information display screen 100 for Dateline when, for example, the user pressed an OK key of a remote control

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after navigating a highlight region on a Dateline program listing, the user pressed an INFO key when video for Dateline is being displayed, etc. Examples of program guide systems with information display screen capabilities are provided in Rudnick et al., U.S. Patent Application Serial No. 09/356,268 filed July 16, 1999, which is hereby incorporated by reference herein in its entirety.

Illustrative steps involved in displaying program listings that are related to a given program in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown in FIG. 4. At step 106, the program guide may provide the user with an opportunity to indicate an interest in a given program. At step 108, when the user indicates an interest in the given program, the program guide may provide the user with an opportunity to request that the system locate programs that are related to the given program.

At step 110, the program guide may locate program listings (e.g., program listings stored in a program guide database, such as database 64 of FIG. 1) that are related to the given program. The program guide may locate program listings based on attributes of the given program. For example, the program guide may locate program listings for programs that have an attribute that matches an attribute of the given program (e.g., a common actor, same content, same subject matter, same series, common director, same category, same theme, common production year, etc.), program listings for programs that have a plurality of attributes matching attributes of the given program, program listings for programs that have attributes that are related to the attributes of the given program

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(e.g., prequels, sequels, similar content, similar subject matter, related series, etc.), etc.

At step 112, the program guide may display a display screen (or, if desired, an overlay) having
5 listings for programs which are related to the user-selected program. From the list, the user may find a particular program of interest to the user. The program guide may provide the user with an opportunity to select a program listing from the list at step 114.
10 Illustrative program listings display screen 116, illustrative information display screen 118, and illustrative related-program find display screen 120 of FIG. 5 may be provided based on the illustrative steps of FIG. 4. The program guide may display information
15 display screen 118 for Star Trek: The Next Generation - Episode Y when a user selects a listing for Star Trek: The Next Generation - Episode Y in program listings display screen 116 (e.g., by pressing an INFO key when a highlight region is positioned on that listing).
20 Information display screen 118 may include a related programs options 122 for requesting to find programs related to Star Trek: The Next Generation - Episode Y.

The program guide may display related program find display screen 120 when a user selects the related
25 programs option 122 from information display screen 118. Related-program find display screen 120 includes a list of programs related to Star Trek: The Next Generation - Episode Y that contains: Episode K of Star Trek: The Next Generation, Episode D of Star Trek:
30 Voyager, Star Trek: Wrath of Khan, Episode Z of Babylon 5, Episode X of Babylon 5, etc. The list may have been sorted based on attributes that were used by the program guide to locate the displayed program listings. For example, the list may have been sorted based on

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which attribute caused the match, or for example, based on how many attributes matched. Related-program find display screen 120 may include an indicator, such as arrow 124, to inform the user that the list may be
5 scrolled to display further listings for related programs that are not currently displayed. Such an indicator may be used when there is insufficient space for displaying all the related programs in a related program find display screen.

10 Illustrative steps involved in displaying program listings that are related to a given program based on user-configured search parameters in an interactive television system such as interactive television program guide system 50 of FIG. 1 are shown
15 in FIG. 6. Steps 126 and 128 are the same as steps 106 and 108 of FIG. 4, respectively, and are discussed above. At step 130 of FIG. 6, when the user requests that the system locate programs that are related to a given program, the program guide may provide the user
20 with an opportunity to configure search parameters for searching for related programs based on attributes of the user-selected program. At step 132, the program guide may then locate program listings based on the user-configured search parameters. The program guide
25 may locate program listings from program listings stored in a database, such as program listings database 64 FIG. 1. The location of the program listings database may depend on the communications arrangement of the interactive television program guide system
30 (e.g., in a client-server arrangement at least part of the database may be located at a television distribution facility). At step 134, the program guide may display a display screen including on-screen listings for programs that are related to the given

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program based on the user-configured search parameters. At step 134a, the program guide may sort the located listings for display based on the user-configured search parameters. At step 134b, the program guide may
5 provide the user with an opportunity to select one of the displayed programs listings.

Illustrative display screen 136 and illustrative related-program find search configuration display screen 138 (hereinafter, configuration display
10 screen 138) of FIG. 7a may be provided based on the illustrative steps of FIG. 6. The program guide may display configuration display screen 138 for an episode of Star Trek: The Next Generation when a user presses a single key of a remote control while a video for that
15 episode of Star Trek: The Next Generation is being displayed. Configuration display screen 138 may contain an on-screen list of attributes for the given program, Star Trek: The Next Generation. The configuration display screen 138 may contain options
20 for providing the user with an opportunity to assign various importance levels to the on-screen program attributes. The option may provide the user with an opportunity to assign different importance levels such as required, desired, ignored, or excluded to the
25 program attributes.

Configuration display screen 138 shows that importance levels may be assigned to the program attributes for the given episode of Star Trek: The Next Generation so that when locating related program
30 listings, the program guide excludes programs that are Star Trek: The Next Generation, ignores whether a program is a Star Trek program when deciding whether it matches, ignores whether a program is a Star Trek movie when deciding whether it matches, requires matching

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programs to be science fiction, requires matching programs to have Patrick Stewart. Configuration display screen 138 may include a search option that may provide the user with an opportunity to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

Illustrative related-program find display screens 140 and 142 of FIG. 7b may be provided based on the illustrative steps of FIG. 6. The program guide may display related-program find display screen 140 when, for example, the user selects the search option from configuration display screen 138 of FIG. 7a. Display screen 140 may include a list of programs that are related to the given program based on the search parameters of configuration display screen 138 of FIG. 7a. The list of related programs in display screen 140 includes the program Lifeforce, which is a science fiction program (a required attribute) starring Patrick Stewart (a required attribute), and includes three Star Trek movies (Insurrection, First Contact, and Generations) that are also science fiction programs starring Patrick Stewart and also starring Jonathan Frakes (a desired attribute). Lifeforce may be displayed at the bottom of the list because the other programs more closely match the user-configured search parameters.

Display screen 140 may include option 144 for displaying more program listings that are related to Star-Trek: The Next Generation based on the user-configured search parameters. Display screen 140 may include save configuration option 146 that provides the user with an opportunity to save the user-configured search parameters. The program guide may display

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related-program find display screen 142 when the user selects save configuration option 146 of display screen 140. Display screen 142 is the same display screen as display screen 140 except that display screen 142
5 includes unsave configuration option 148 that provides the user with an opportunity to unsave the user-configured search parameters (e.g., delete the saved user-configured search parameters).

If desired, an arrangement such as that shown
10 in FIG. 7c may be used to search for related programs. Initially, the user may indicate an interest in a given program by selecting a program listing for the given program from an on-screen display of program listings, by pressing an OK button or other remote control button
15 while tuned to the given program (e.g., while tuned to the given program with a set-top box or the like), by selecting the program from the results of a search, etc.

A list of attributes for the given program
20 (such as the attribute list of display screen 300 of FIG. 7c) may be displayed for the user (e.g., by the program guide or other interactive application running on the system). A moveable highlight region such as highlight region 302 or other such indicator may be
25 used to provide the user with an opportunity to select attributes of interest to be used in searching for related programs.

As shown in display screen 304 of FIG. 7c, the user may select one or more attributes (e.g., by
30 pressing a remote control OK button or otherwise selecting desired attributes). The system may display a visual indication of which program attributes have been scheduled. For example, the system may highlight selected attributes, may change their color, text font,

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brightness, etc. or may display an indicator such as indicators 306 to indicate which program attributes have been selected by the user. When the user highlights search option 308 and presses a remote control OK button (or otherwise selects option 308), the system searches for program listings matching the selected program attributes. When plural attributes are selected, the search may be performed using a logical AND or a logical OR function. The search results may be displayed using any suitable on-screen arrangement and may be selectable (for more information, automatic tuning, etc.) if desired.

The arrangement of FIG. 7c is merely illustrative. Any suitable arrangement may be used for providing an on-screen display of program attributes related to a selected program. The attributes may include program genre(s), actors, rating, channel, director, year produced, or any other suitable program attributes. The program attribute information may be provided with the program listings data. In a client-server arrangement, for example, the program attributes may be maintained with program listings data stored on a server located at a cable system headend (or at another suitable location). In configurations in which program listings are stored locally on a set-top box or other user equipment, program attributes may be maintained locally.

Illustrative information display screen 150 and illustrative related-program find search configuration display screen 152 (hereinafter, configuration display screen 152) of FIG. 8a may be provided based on the illustrative steps of FIG. 6. The program guide may display information display screen 150 when a user selects to receive information

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on the Denver Broncos v. Dallas Cowboys football game. Information display screen 150 may include related programs option 154 that provides the user with an opportunity to request that the system locate programs
5 that are related to the Denver Broncos v. Dallas Cowboys football game. The program guide may display configuration display screen 152 when the user selects the related programs options from information display screen 150. Configuration display screen 152 may
10 include an on-screen list of program attributes that are to be configured by the user.

The on-screen program attributes may differ based on the specifics of the given program and based on the category for the given program. For example,
15 for a sports category program, the on-screen list may include attributes that are specific to that sports program and/or include attributes that are related to sports programs in general. As shown, configuration display screen 152 may include the following
20 attributes: other football games, NFL games, Broncos games, Cowboys games, any sporting events, football-related programs, programs with John Elway as guest, etc. The user may then configure the search parameters to require matching programs to be football games,
25 desire NFL games and Broncos games, exclude Cowboys games, ignore whether a program is a sporting event when deciding whether it matches, ignore whether a program is a football related program when deciding whether it matches, and ignore whether a program has
30 John Elway as guest when deciding whether it matches.

Illustrative related program find display screen 158 of FIG. 8b may be provided based on the illustrative steps of FIG. 6. Display screen 158 may be displayed when a user selects search option 156 from

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configuration display screen 152 of FIG. 8a. Display screen 158 of FIG. 8b may include listings that are sorted for display based on the user-configured search parameters of configuration display screen 158. The
5 program guide may display program display screen 160 that contains video of a current program when the user selects a listing for a current program from the program listings contained in related-program find display screen 158. If desired, the program guide may
10 display information display screen 162 for a program when the user selects a program listing from the program listings contained in related-program find display screen 158.

If desired, the listings in related-program
15 find display screen 158 may include program title, air time, channel, rating, pay-per-view information, etc.

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in providing
20 the illustrative display screens of FIG. 8b are shown in FIG. 9. At step 164, the program guide may display a display screen having on-screen program listings that are related to a given program. Step 164 may include step 166 in which the program may provide the user with
25 an opportunity to select one of the on-screen program listings. At step 168, the program guide may tune to a channel for a current program when the user selects one of the on-screen listings that is for a current program. At step 170, the program guide may display an
30 information display screen for a selected on-screen listing when the user selects that on-screen listing. At step 172, the program guide may return the user to viewing television or to an earlier display screen when the user exits from the display screen having the

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related on-screen program listings (e.g., presses an exit or back key of a remote control).

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in displaying a list of saved searches are shown in FIG. 10a. At step 174, the program guide may provide the user with an opportunity to select a saved search option. At step 176, the program guide may display a display screen having a list of saved searches when a user selects the saved search option.

Illustrative main menu display screen 178 and illustrative saved searches display screen 180 of FIG. 10b may be provided based on the illustrative steps of FIG. 10a. The program guide may display main menu display screen 178 to provide a main selection menu for accessing program guide features. Main menu display screen 178 may include saved searches option 182. The program guide may display saved searches display screen 180 when the user selects saved searches option 182. Saved searches display screen 180 may include a list of saved-searches that are identified on the screen using the given program title for each saved search. When two saved searches are for two programs with the same title, the program guide may use numbering to distinguish the listings. If desired, the user may have been allowed to name the saved searches. For example, the program guide may have provided the user with an opportunity to enter a name (e.g., by selecting or entering alphanumeric letters with a user interface device) for a search that a user is directing the program guide to save. The saved searches may be selected by the user to provide the user with an opportunity to search current program listings using

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search parameters that were user-configured in an earlier search of program listings.

Illustrative steps for an interactive television system such as interactive television program guide system 50 of FIG. 1 involved in displaying a list of saved searches are shown in FIG. 11. At step 184, the program guide may display a display screen having a list of saved searches. At step 186, the program guide may provide a user with an opportunity to select a saved search. At step 188, the program guide may display a list of programs based on a search of currently available program listings with saved search parameters from an earlier search.

At step 190, the program guide may provide the user with an opportunity to delete a saved search from the list of saved searches. At step 192, the program guide may delete a particular saved search when the user selects to delete that particular saved search.

At step 194, the program guide may provide the user with an opportunity to select an option to view user-configured search parameters for a saved search. At step 196, the program guide may display a display screen having user-configured search parameters for a saved search when the user selects to view user-configured search parameters for that saved search. If desired, step 196 may include a step that provides the user with the opportunity to modify the save searches.

At step 198, the program guide may provide the user with an opportunity to set (or remove) an automatic notification for programs that have been located using a saved search. At step 200, the program guide may display a notice that a located program is scheduled to air when the user has selected to receive

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automatic notifications. If desired, step 200 may include a step that provides the user with the opportunity to act on it.

Illustrative saved searches display screen 202 and illustrative related-program find display screen 204 of FIG. 12 may be provided based on the illustrative steps of FIG. 11. Saved searches display screen 202 may include a list of saved searches and corresponding options, including a search option, for each saved search. The program guide may display related program find display screen 204 when the users selects the search option for Search #4. Related program find display screen 204 may include a list of current program listings based on the user-configured search parameters for Search #4.

Illustrative saved searches display screens 206 and 208 of FIG. 13 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 206 that includes a delete option for Search #3. The program guide may display saved searches display screen 208 that does not include Search #3 when the user selects the delete option for Search #3.

Illustrative display screen 214 and illustrative saved searches display screens 210 and 212 of FIG. 14 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 210 that includes an automatic notification option for saved searches including Search #5. The automatic notification option for search #5 may initially be off. The program guide may display saved searches display screen 212 that includes an indication that the automatic notification for Search #5 is on when the user selects the automatic

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notification option for Search #5 from display screen 210. After the user exits saved searches display screen 212 and resumes watching television, the program guide may display automatic notification overlay 216 in display screen 214 when the program guide locates a program (e.g., the movie Terminator) using the user-configured search parameters for Search #5. If desired, the program guide may provide a notification display screen for the located program. The notification may be displayed when the program is about to air or is airing. The overlay 216 may include a tune option (for tuning to the channel airing that program), an information option (for display further information on that program), a saved searches option (for displaying a saved searches display screen), an order option (for ordering programs), etc.

Illustrative saved searches display screen 218 and illustrative saved search configuration display screen 220 of FIG. 15 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 220 having an option that provides the user with an opportunity to view search parameters for saved searches. The program guide may display saved search configuration display screen 222 for Search #3 when the user selects the option to view search parameters for Search #3. Saved search configuration display screen 222 may display the saved user-configured search parameters for Search #3, a modify configuration option (to allow the user to adjust the search parameters), and a search option (to search the current program listings based on the user-configured search parameters). If desired, the program guide may provide the user with an opportunity to modify the settings on this screen by highlighting and

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changing them, rather than having to first select a "modify" option.

Illustrative saved searches display screen 224 and illustrative saved search configuration display screen 226 of FIG. 16 may be provided based on the illustrative steps of FIG. 11. The program guide may display saved searches display screen 224 that includes a list of saved searches when a user selects a saved searches option (e.g., saved searches option 182 of FIG. 10b). The program guide may display saved search configuration display screen 226 when the user selects a saved search from saved searches display screen 224. Saved search configuration display screen 226 may include on-screen search settings for the selected saved search. The program guide may provide the user with an opportunity to navigate to any of the settings and to modify them. Saved search configuration, display screen 226 may include search option 228 that when selected, causes the program guide to display a list of matching programs, rename option 230 that allows the user to enter a name (or modify the name) for the selected saved search, delete option 232 that when selected, deletes the selected save search, automatic notification option 234 that provides an automatic notification of programs matching the selected saved search, etc. Automatic Notification option 234 may include an indicator 236 to indicate that option 234 is on.

The foregoing is merely illustrative of the principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

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What is Claimed is:

1. A method for searching for television program listings, comprising:
 - providing a user with an opportunity to indicate an interest in a given program;
 - displaying an on-screen list of attributes related to the program;
 - providing the user with an opportunity to select one of the attributes; and
 - displaying a list of program listings related to the selected attribute.
2. The method defined in claim 1, wherein providing the user with the opportunity to indicate an interest in the given program comprises providing the user with an opportunity to select a program listing for the given program from an on-screen display of program listings.
3. The method defined in claim 1, wherein providing the user with the opportunity to indicate an interest in the given program comprises providing the user with an opportunity to indicate an interest in a program that is currently being displayed.
4. The method defined in claim 1, further comprising:
 - providing the user with an opportunity to select a plurality of attributes; and
 - displaying in the list program listings that are related to the selected attributes.

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5. The method defined in claim 1, further comprising providing the user with an opportunity to select program listings from the list.

6. An interactive television program guide system for searching for television program listings, comprising:

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television equipment is configured to provide a user with an opportunity to indicate an interest in a given program, to display an on-screen list of attributes related to the program, to provide the user with an opportunity to select one of the attributes, and to display a list of program listings related to the selected attribute.

7. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with the opportunity to indicate an interest in the given program by being configured to provide the user with an opportunity to select a program listing for the given program from an on-screen display of program listings.

8. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with the opportunity to indicate an interest in the given program by being configured to provide the user with an opportunity to indicate an interest in a program that is currently being displayed.

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9. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with an opportunity to select a plurality of attributes, and to display in the list program listings that are related to the selected attributes.

10. The system defined in claim 6, wherein the user television equipment is further configured to provide the user with an opportunity to select program listings from the list.

11. A method for use in an interactive television program guide system having user television equipment and a remote control for interfacing with said user television equipment, said method being for searching for programs, comprising:

displaying a display screen that includes a video for a given program;

allowing the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to locate program listings related to the given program; and

displaying a display screen including the program listings located by the system.

12. The method defined in claim 11, further comprising sorting the program listings located by the system for display.

13. The method defined in claim 11, further comprising providing the user with an opportunity to select any of the displayed program listings.

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14. The method defined in claim 13, further comprising tuning to a particular program when the user selects a listing for the particular program from the displayed listings.

15. The method defined in claim 13, further comprising tuning to a current program when the user selects a particular one of the displayed listings that lists a current program.

16. The method defined in claim 13, further comprising displaying an information display screen that contains information related to a particular one of the displayed listing when the user selects that particular listing.

17. The method defined in claim 11, further comprising locating programs based on attributes of the given program.

18. An interactive television program guide system for searching for programs, comprising:

a remote control that is configured to interface with user television equipment;

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television equipment is configured to display a display screen that includes a video for a given program, to allow the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to locate program listings related to the given program, and to display a

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display screen that includes the program listings located by the system.

19. The system defined in claim 18, wherein the user television equipment is further configured to sort the program listings located by the system for display.

20. The system defined in claim 18, wherein the user television equipment is further configured to provide the user with an opportunity to select any of the displayed program listings.

21. The system defined in claim 20, wherein the user television equipment is further configured to tune to a particular program when the user selects a listing for the particular program from the displayed listings.

22. The system defined in claim 20, wherein the user television equipment is further configured to tune to a current program when the user selects a particular one of the displayed listings that lists a current program.

23. The system defined in claim 20, wherein the user television equipment is further configured to display an information display screen that contains information related to a particular one of the displayed listing when the user selects that particular listing.

24. The system defined in claim 18, wherein the user television equipment is further configured to

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locate programs based on attributes of the given program.

25. A method for use in an interactive television program guide system having user television equipment and a remote control for interfacing with said user television equipment, said method being for searching for programs, comprising:

- displaying a display screen that includes a video for a given program;

- allowing the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to display a display screen containing a plurality of program attributes for the given program;

- providing the user with an opportunity to assign various importance levels to the program attributes on the display screen; and

- displaying a selectable search option on the same display screen as the program attributes and assigned importance levels that the user selects to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

26. The method defined in claim 25, further comprising providing the user with an opportunity to have the program guide system save the plurality of program attributes for the given program.

27. The method defined in claim 26, further comprising providing the user with an opportunity to have the program guide system save the plurality of

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program attributes for the given program and their assigned importance levels.

28. The method defined in claim 26, further comprising providing the user with an opportunity to delete the saved plurality of program attributes for the given program.

29. The method defined in claim 25, further comprising displaying a list of program listings that the program guide system located based on the attributes and their assigned importance levels.

30. The method defined in claim 29 further comprising providing the user with an opportunity to select program listings from the list.

31. The method defined in claim 30, further comprising displaying information related to a particular program listing that has been selected from the list.

32. The method defined in claim 30, further comprising tuning to a particular program when a listing for the particular program is selected from the list.

33. An interactive television program guide system, comprising:

a remote control that is configured to interface with user television equipment; and

user television equipment on which an interactive television program guide is at least partially implemented, wherein the user television

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equipment is configured to display a display screen that includes a video for a given program, to allow the user to use a single key on the remote control while the video for the given program is being displayed to direct the program guide system to display a display screen containing a plurality of program attributes for the given program, to provide the user with an opportunity to assign various importance levels to the program attributes on the display screen, and to display a selectable search option on the same display screen as the program attributes and assigned importance levels that the user selects to direct the program guide system to locate program listings related to the given program based on the program attributes and their assigned importance levels.

34. The system defined in claim 33, wherein the user television equipment is further configured to provide the user with an opportunity to have the program guide system save the plurality of program attributes for the given program.

35. The system defined in claim 34, wherein the user television equipment is further configured to provide the user with an opportunity to have the program guide system save the plurality of program attributes for the given program and their assigned importance levels.

36. The system defined in claim 34, wherein the user television equipment is further configured to provide the user with an opportunity to delete the saved plurality of program attributes for the given program.

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37. The system defined in claim 33, wherein the user television equipment is further configured to display a list of program listings that the program guide system located based on the attributes and their assigned importance levels.

38. The system defined in claim 37, wherein the user television equipment is further configured to provide the user with an opportunity to select program listings from the list.

39. The system defined in claim 38, wherein the user television equipment is further configured to display information related to a particular program listing that has been selected from the list.

40. The system defined in claim 38, wherein the user television equipment is further configured to tune to a particular program when a listing for the particular program is selected from the list.

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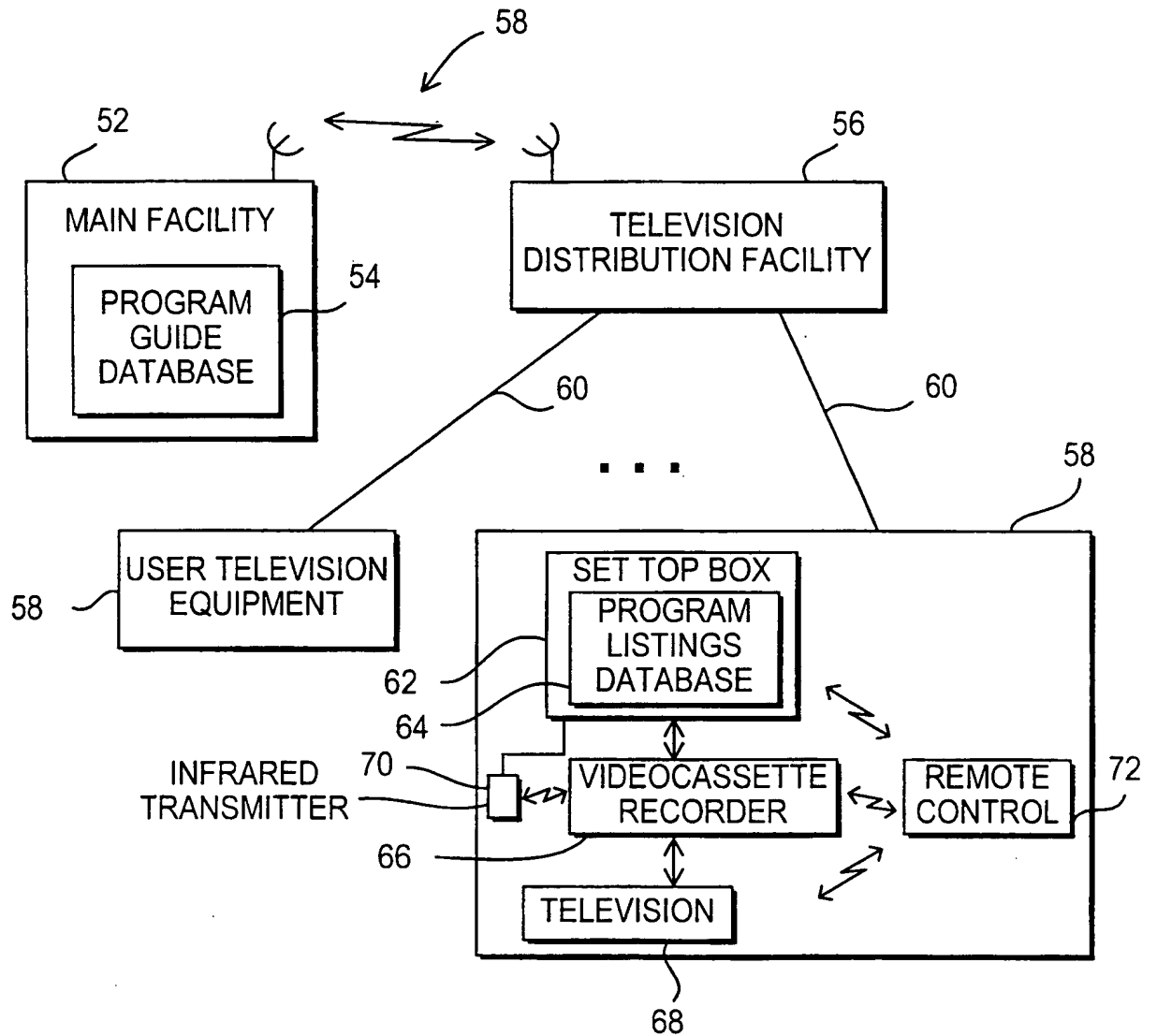
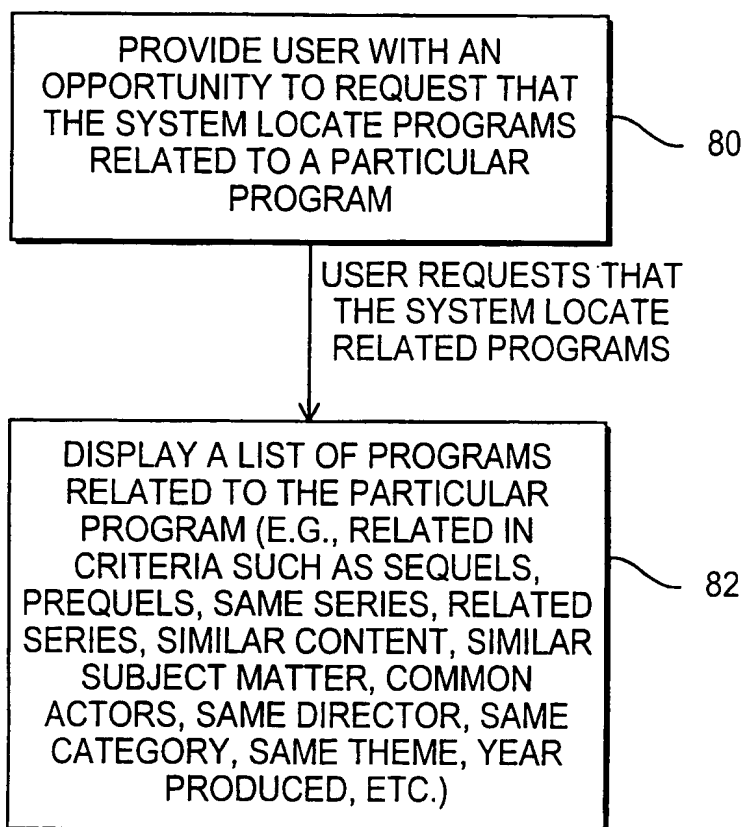


FIG. 1

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*FIG. 2*

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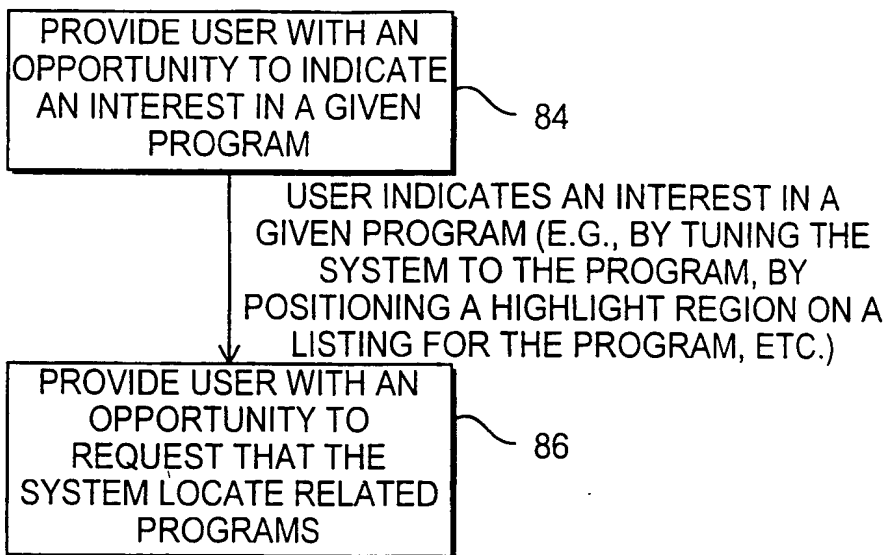


FIG. 3A

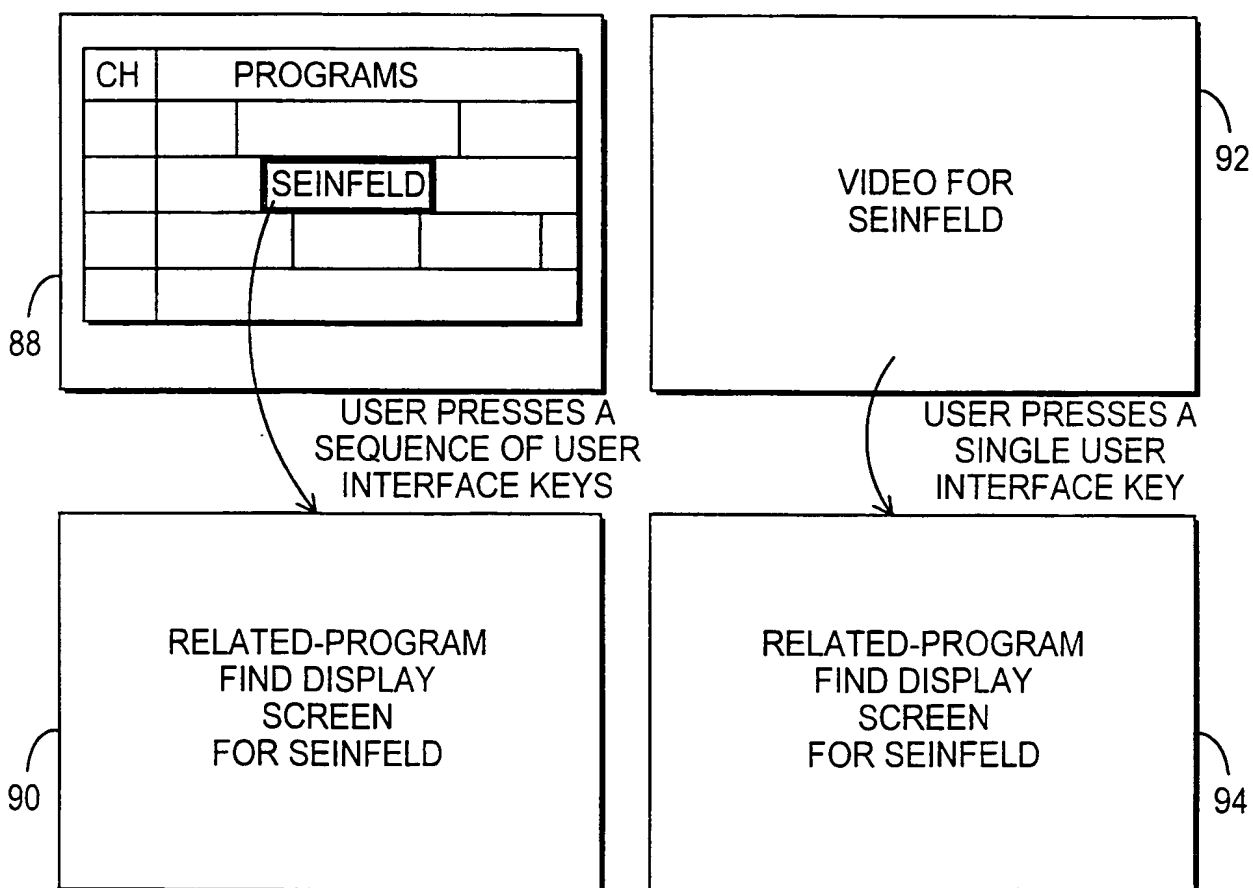


FIG. 3C

FIG. 3B

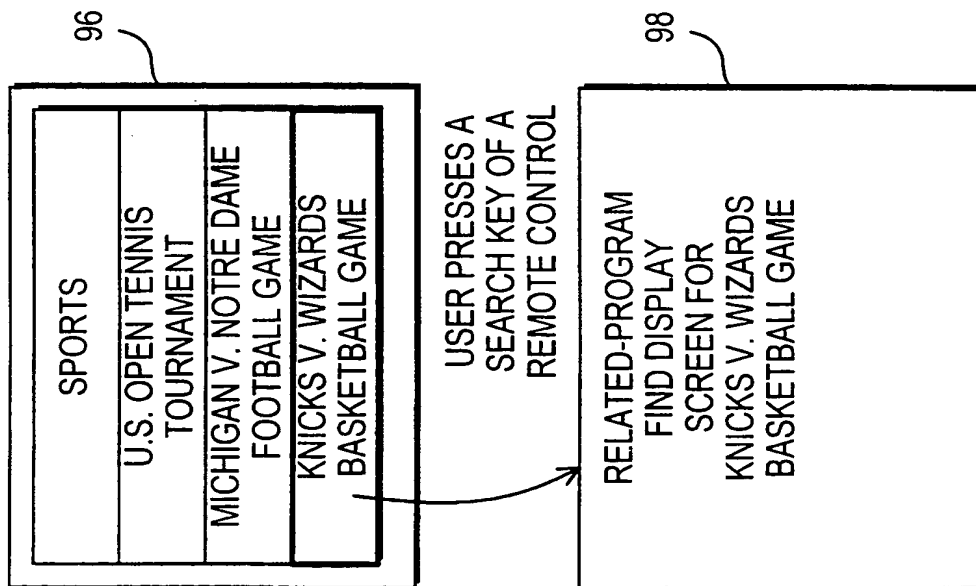


FIG. 3D

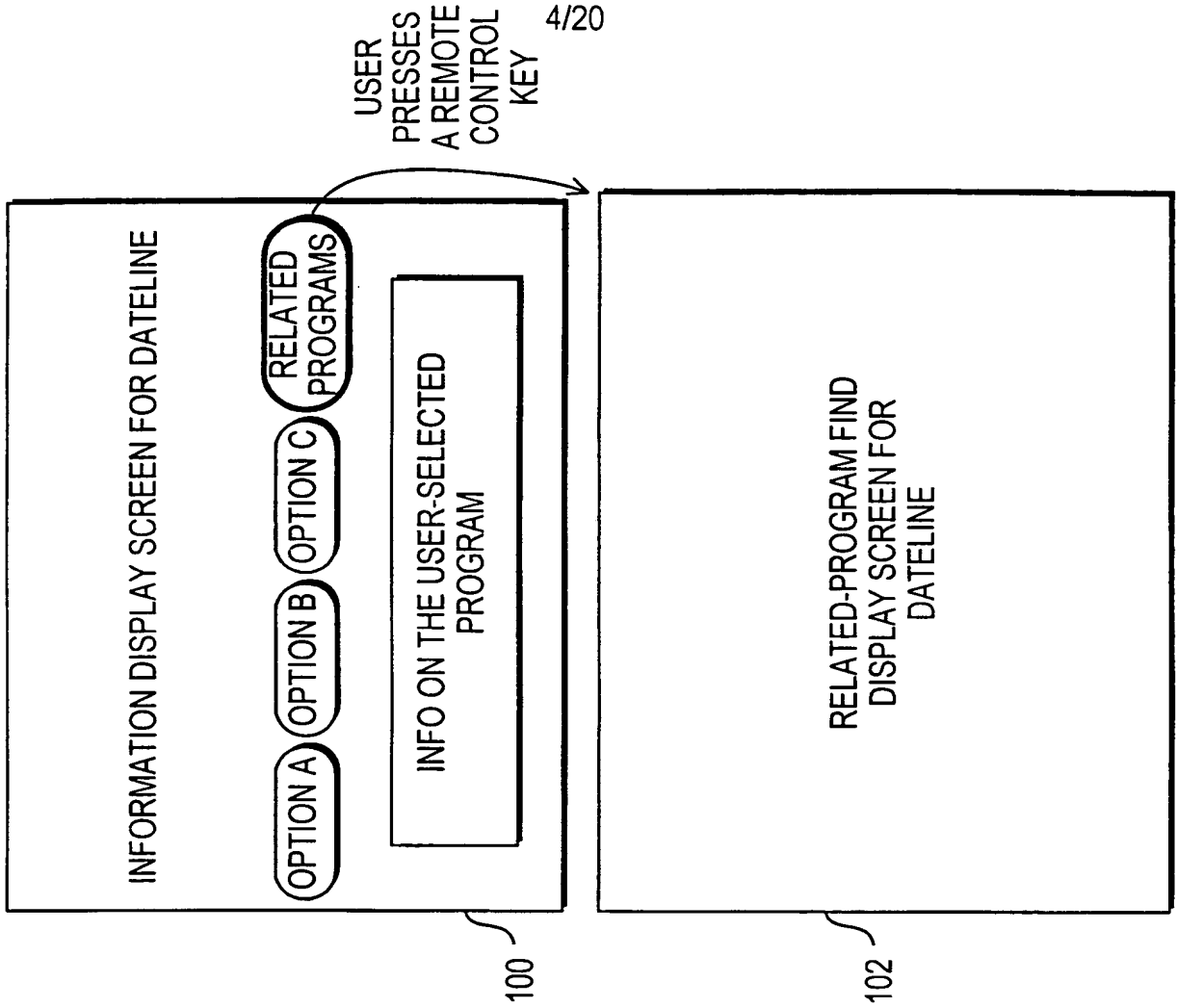


FIG. 3E

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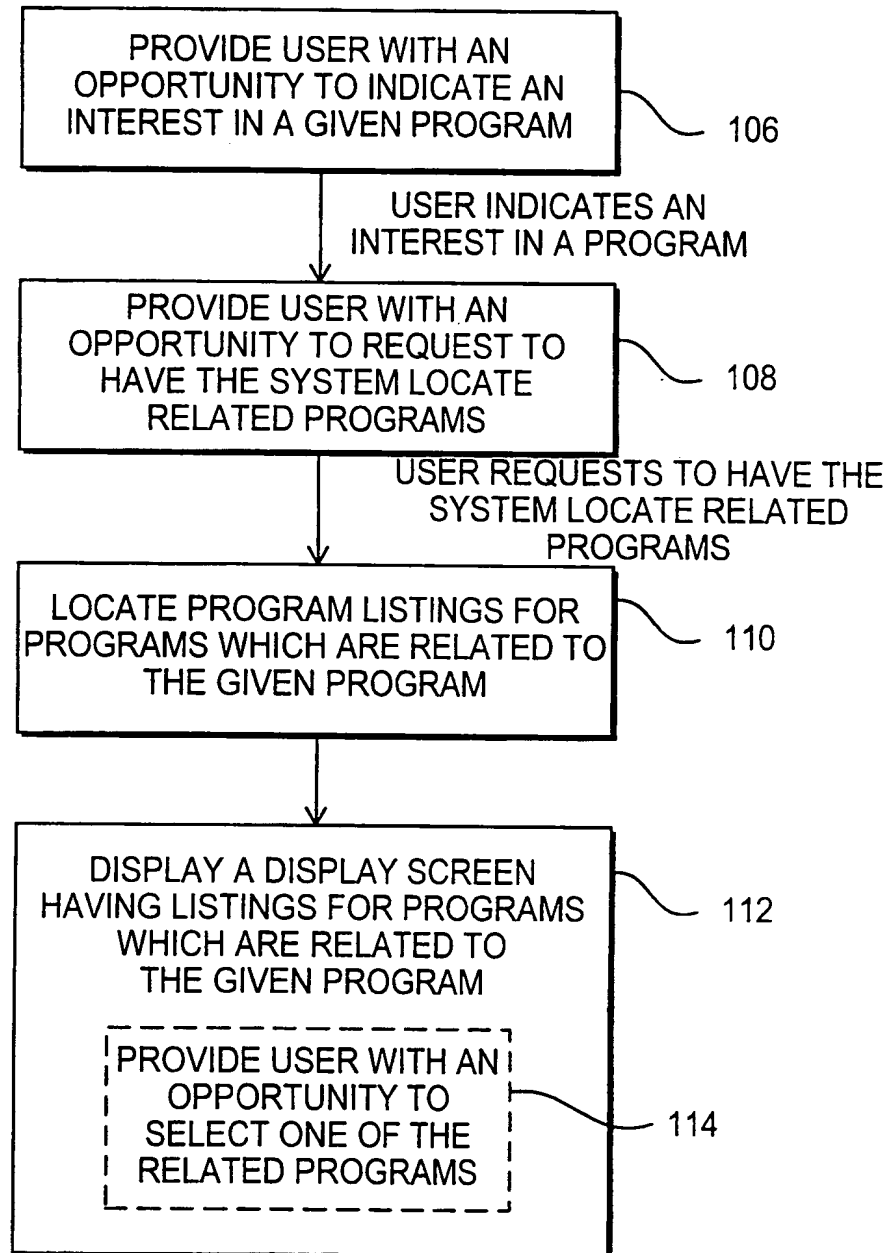


FIG. 4

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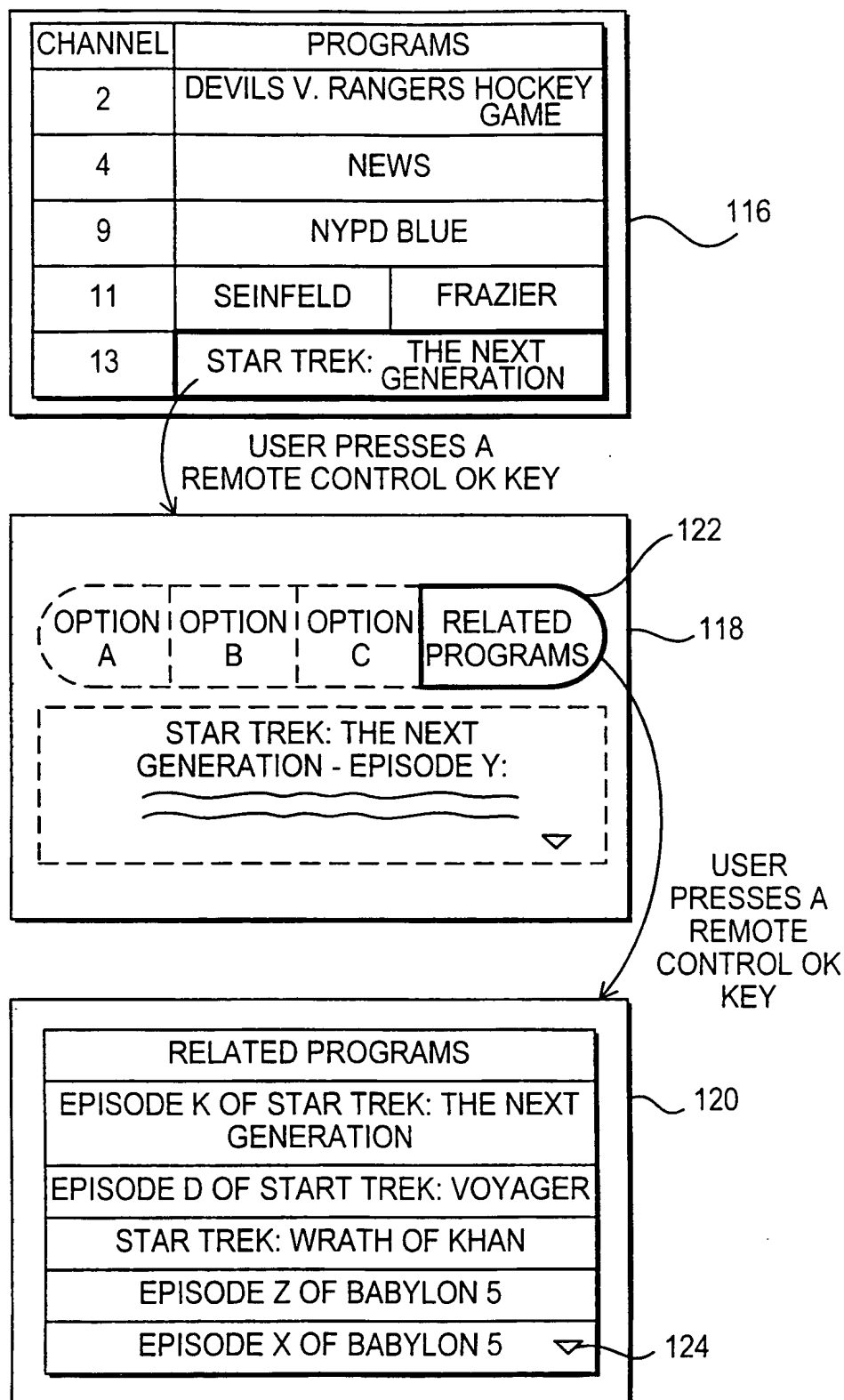


FIG. 5

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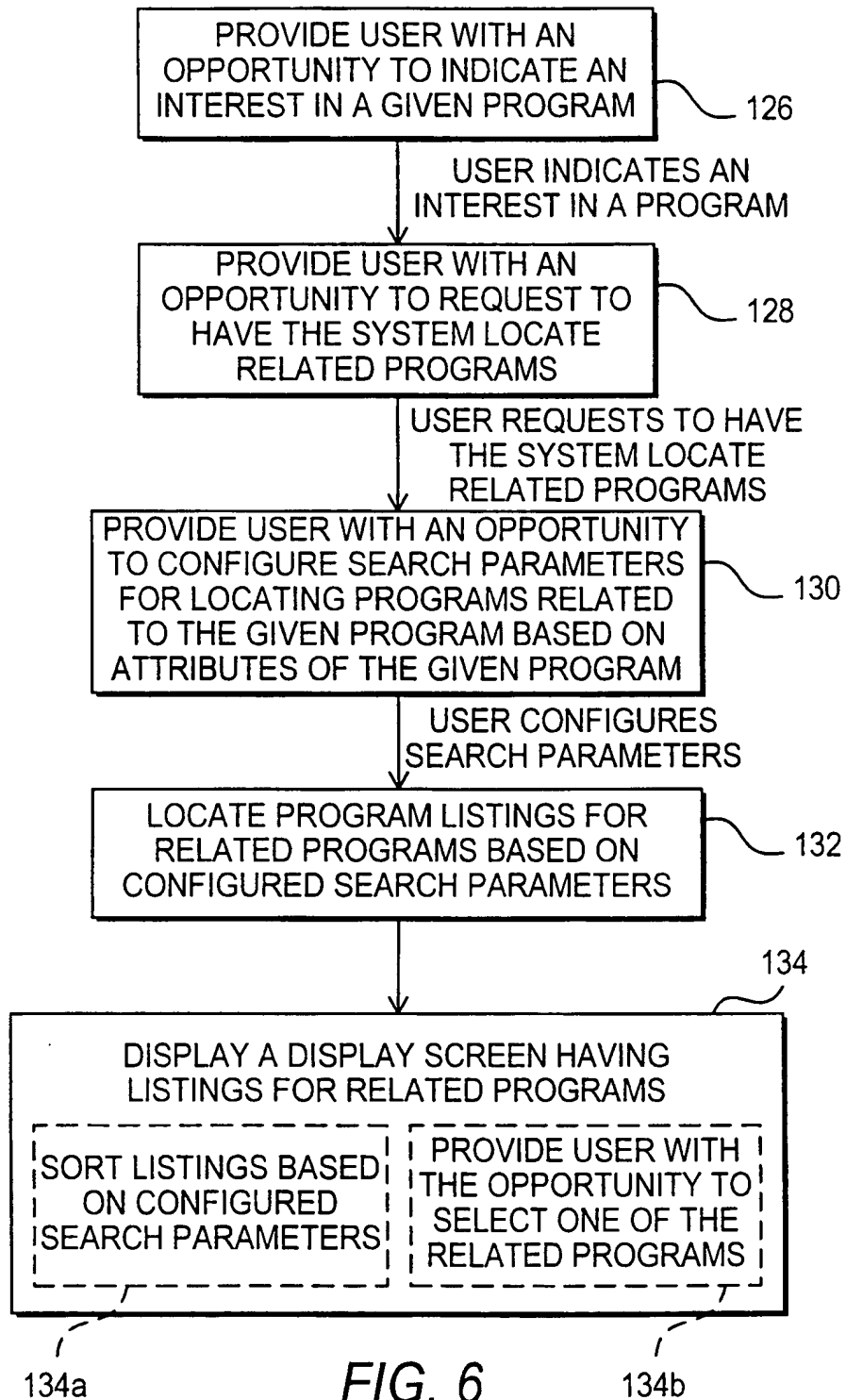
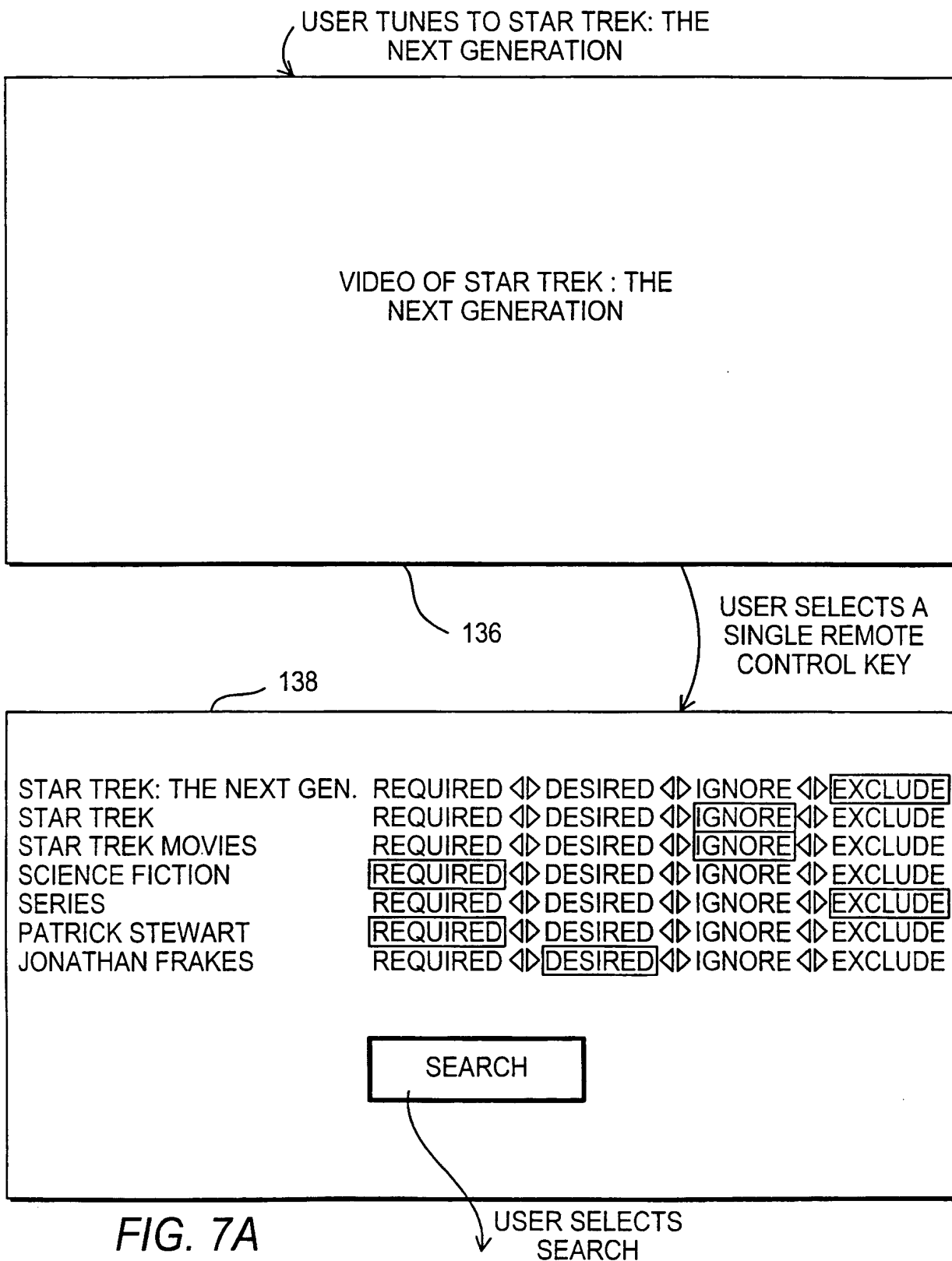
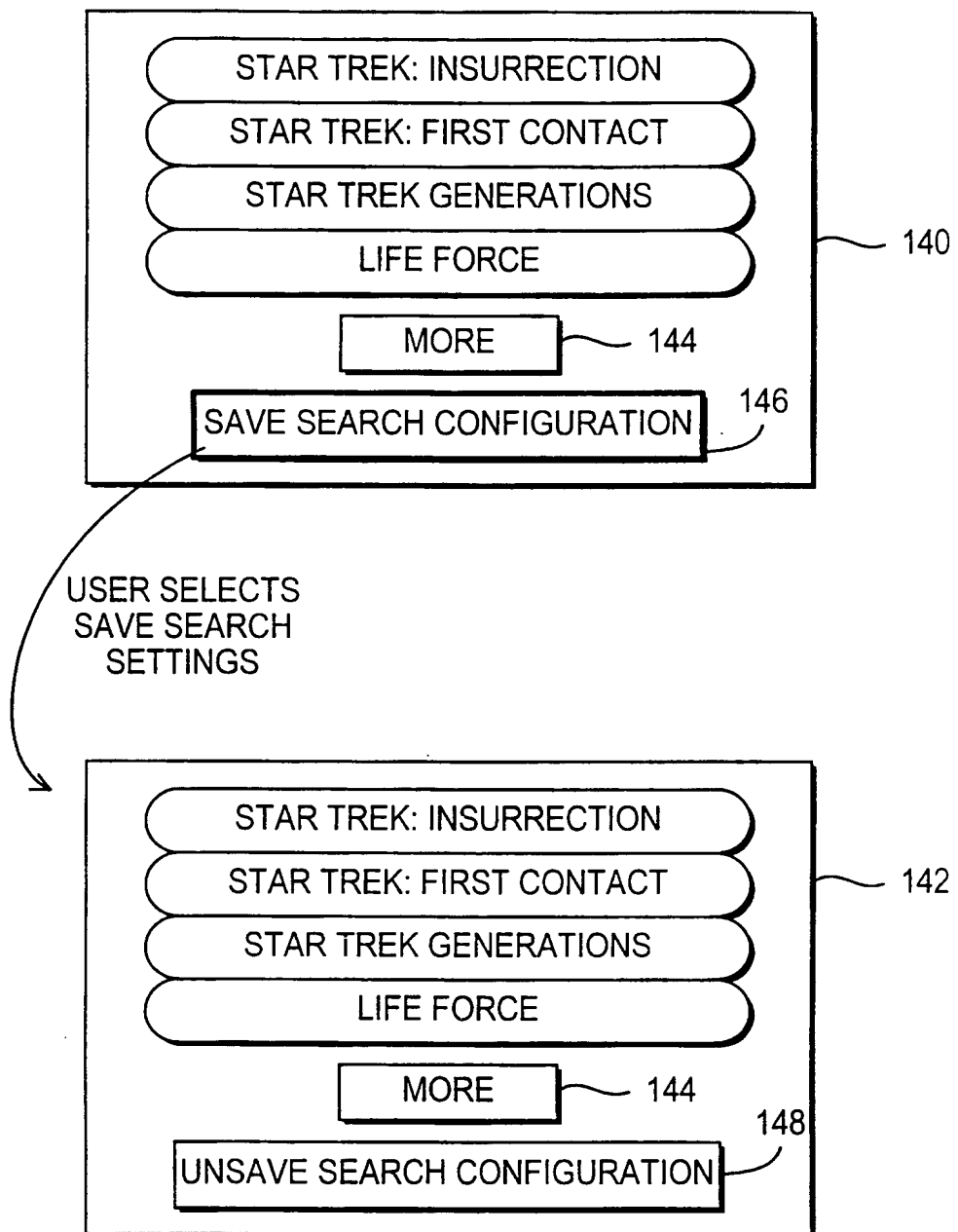


FIG. 6

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**FIG. 7B**

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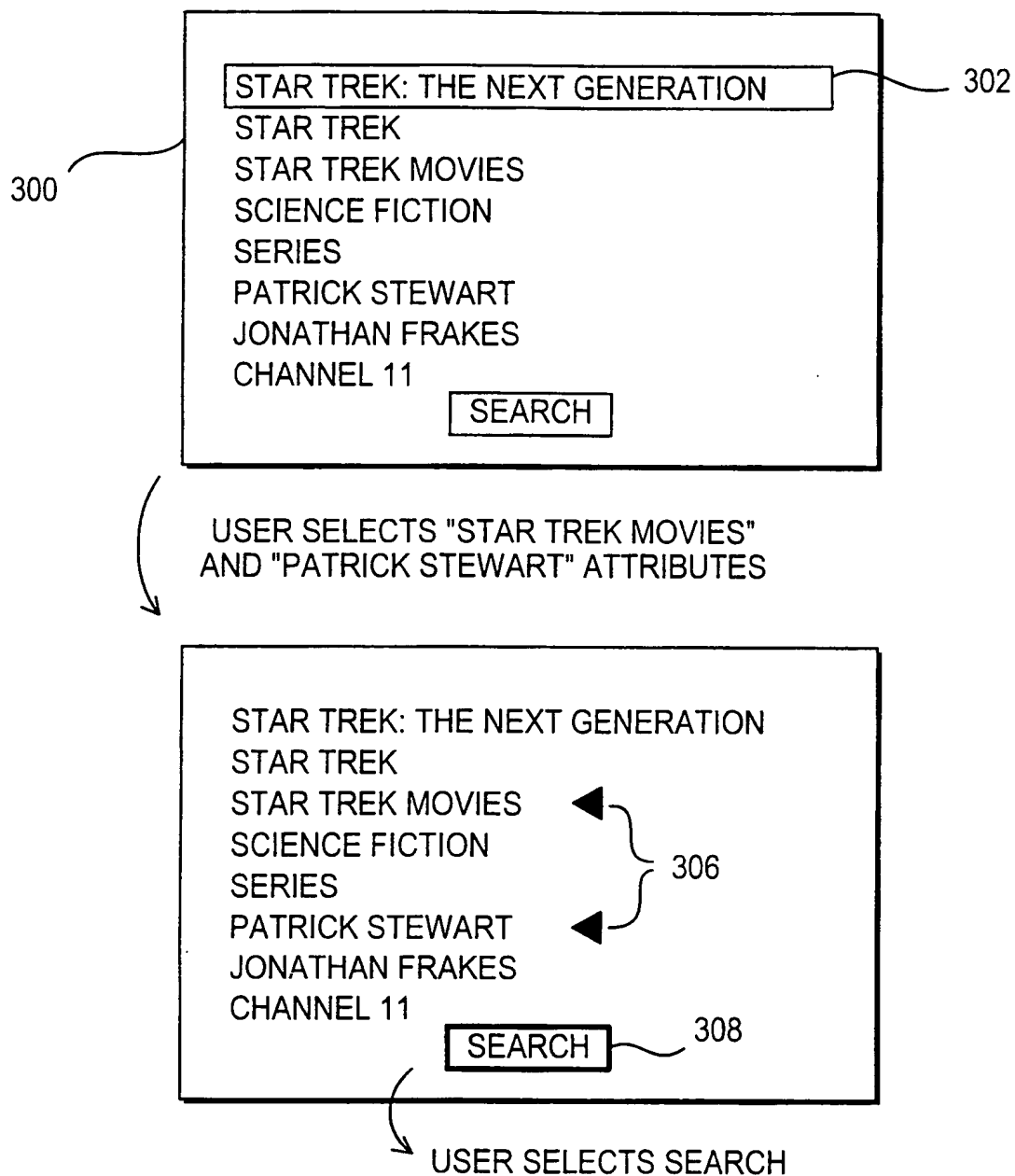
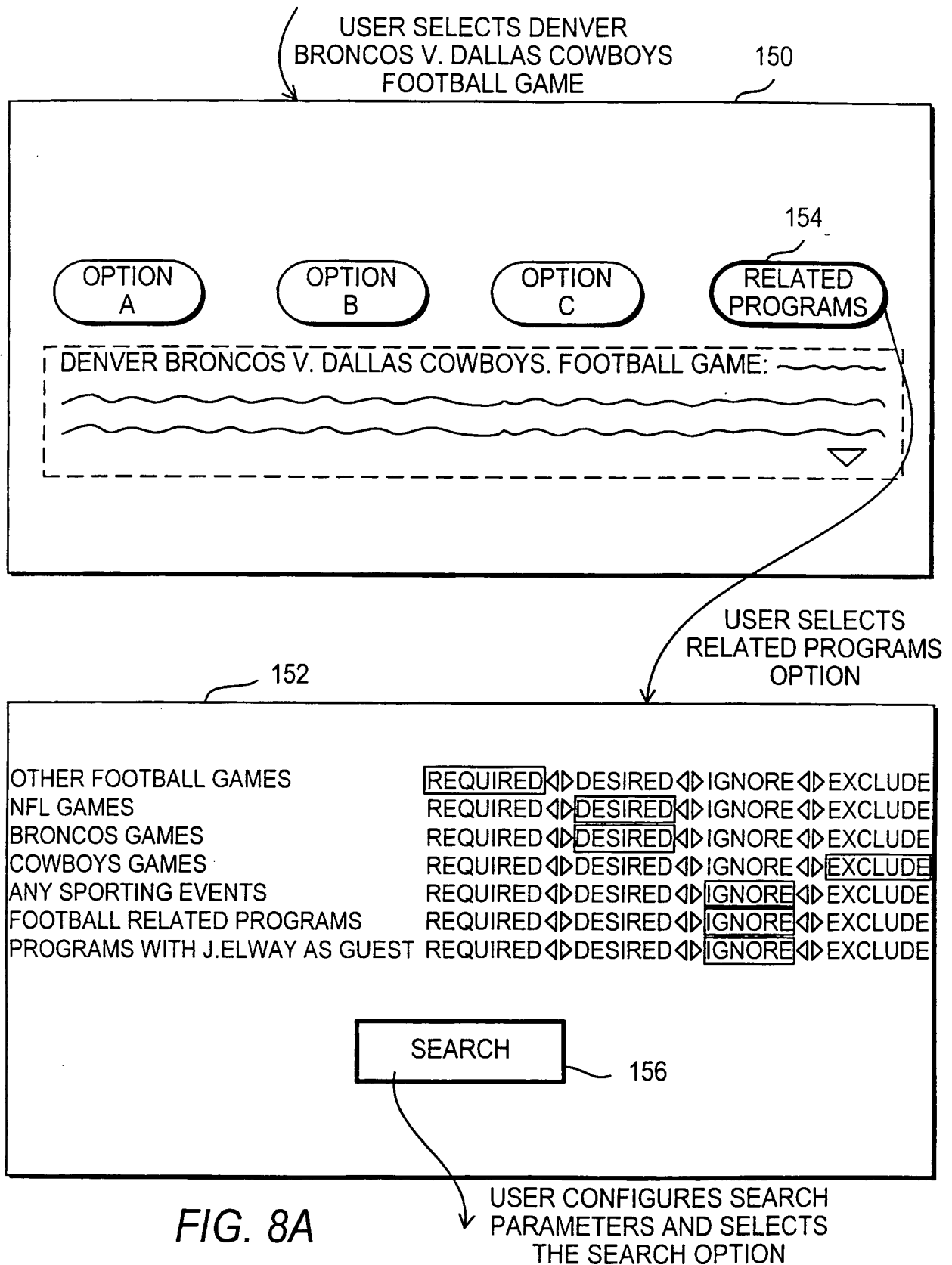


FIG. 7C

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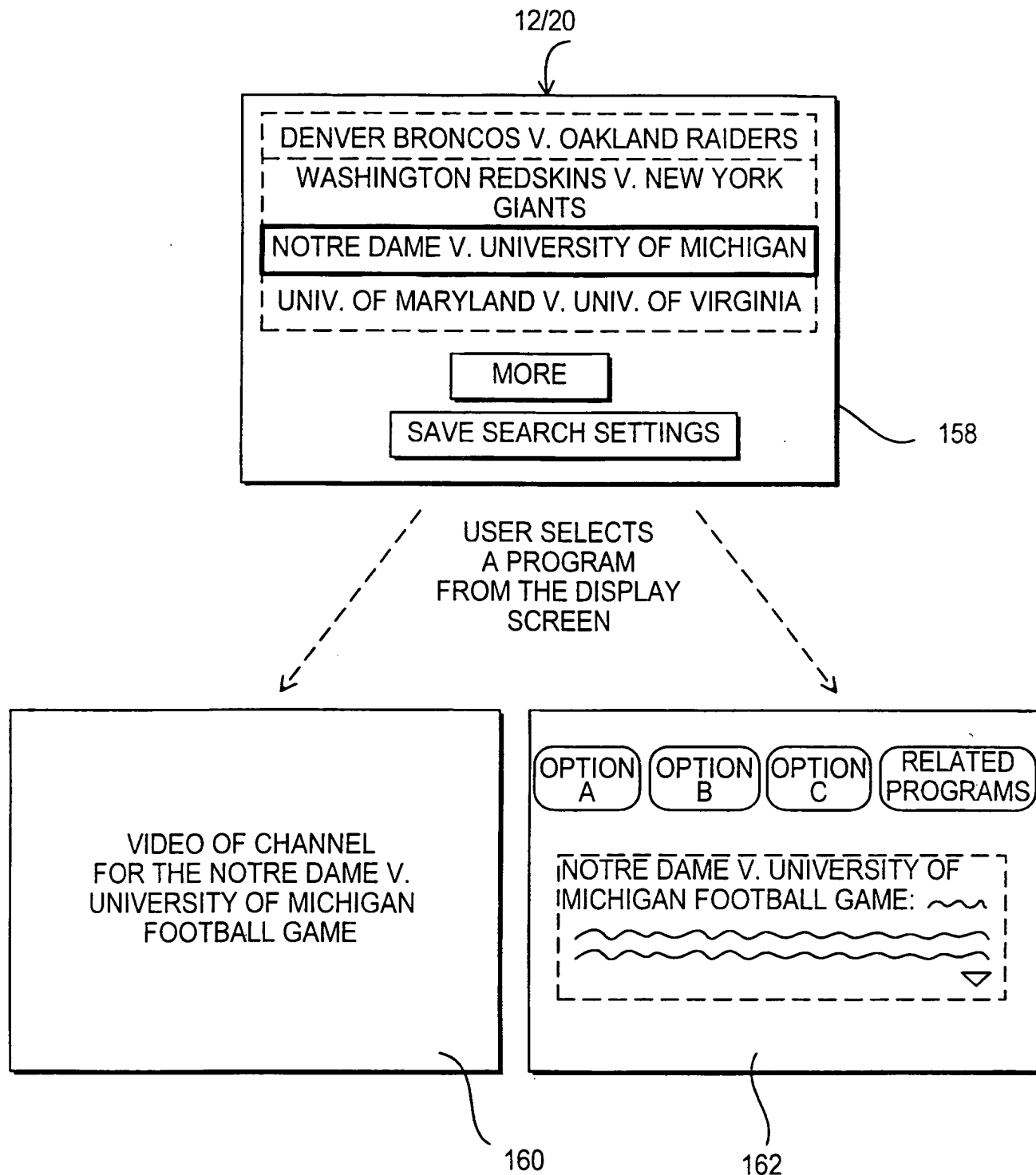


FIG. 8B

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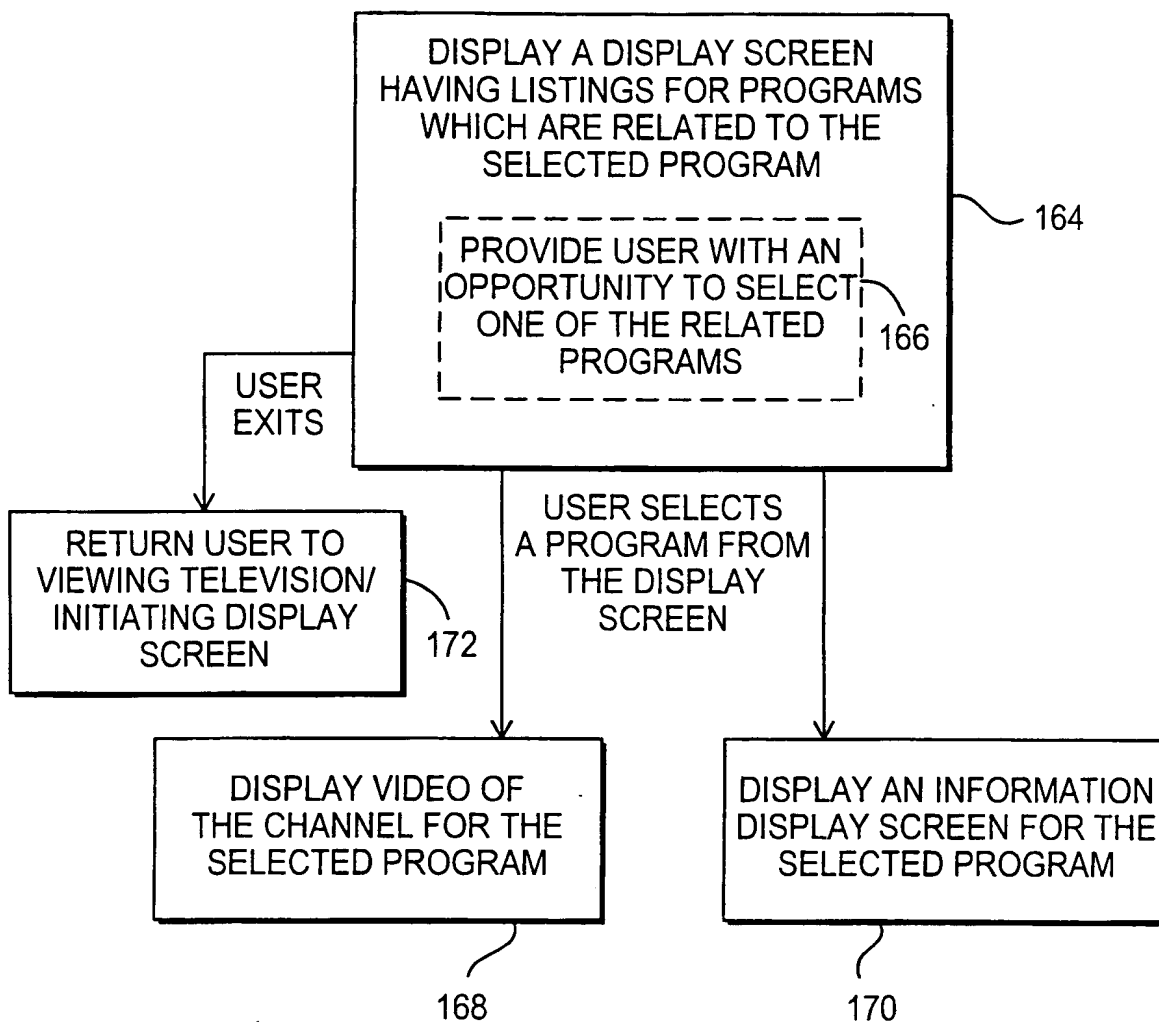


FIG. 9

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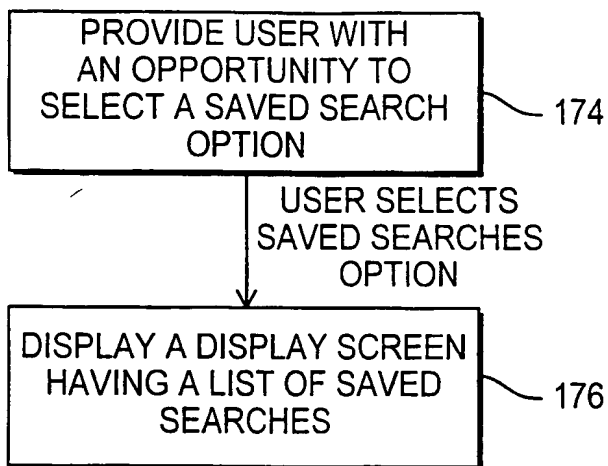


FIG. 10A

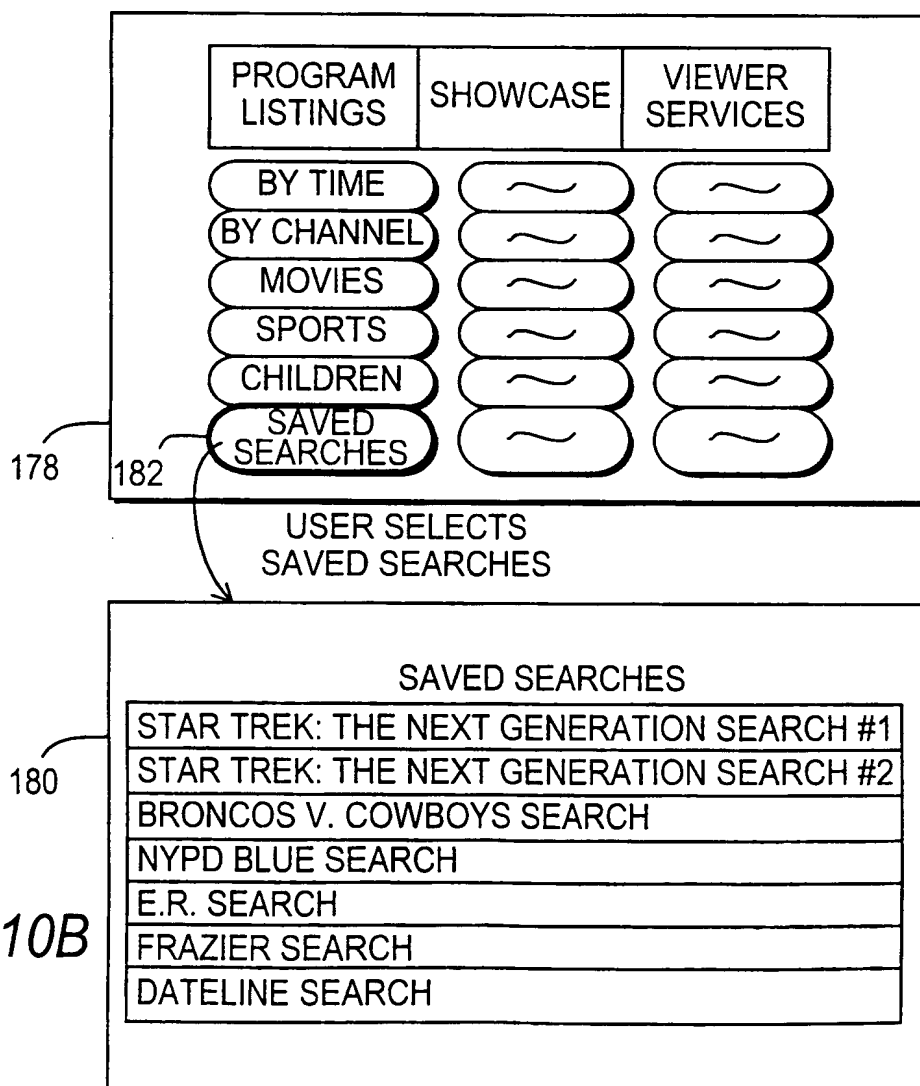


FIG. 10B

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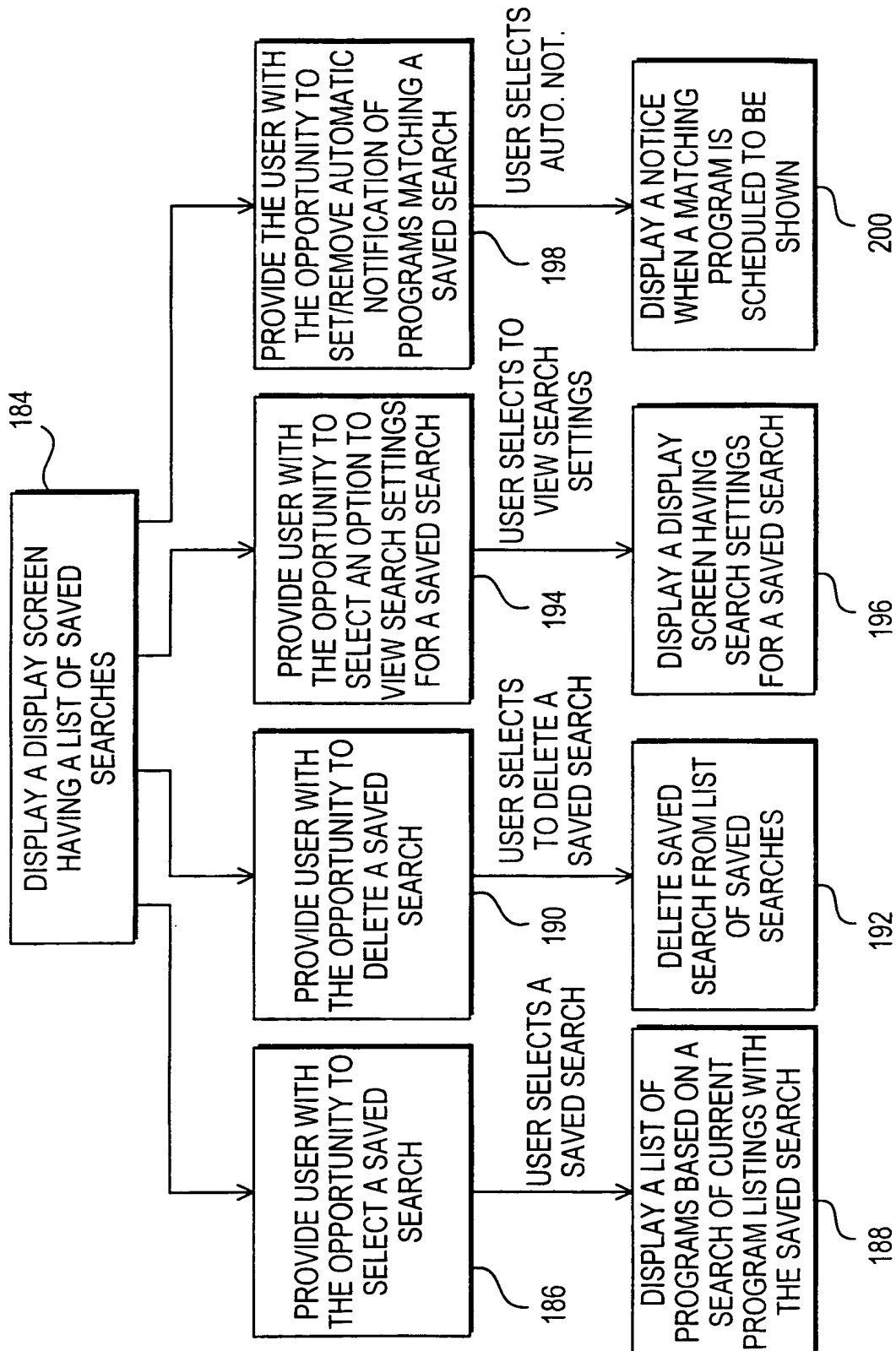


FIG. 11

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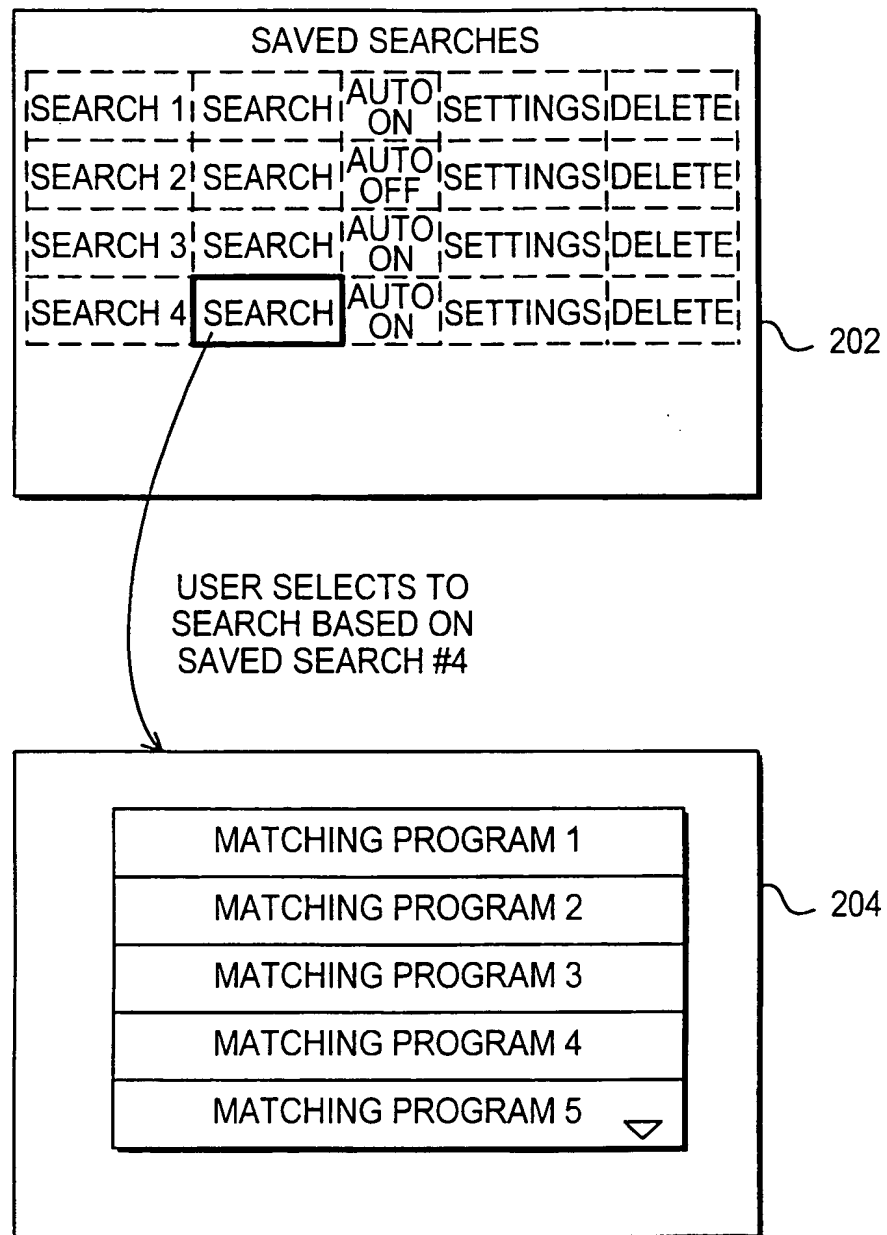


FIG. 12

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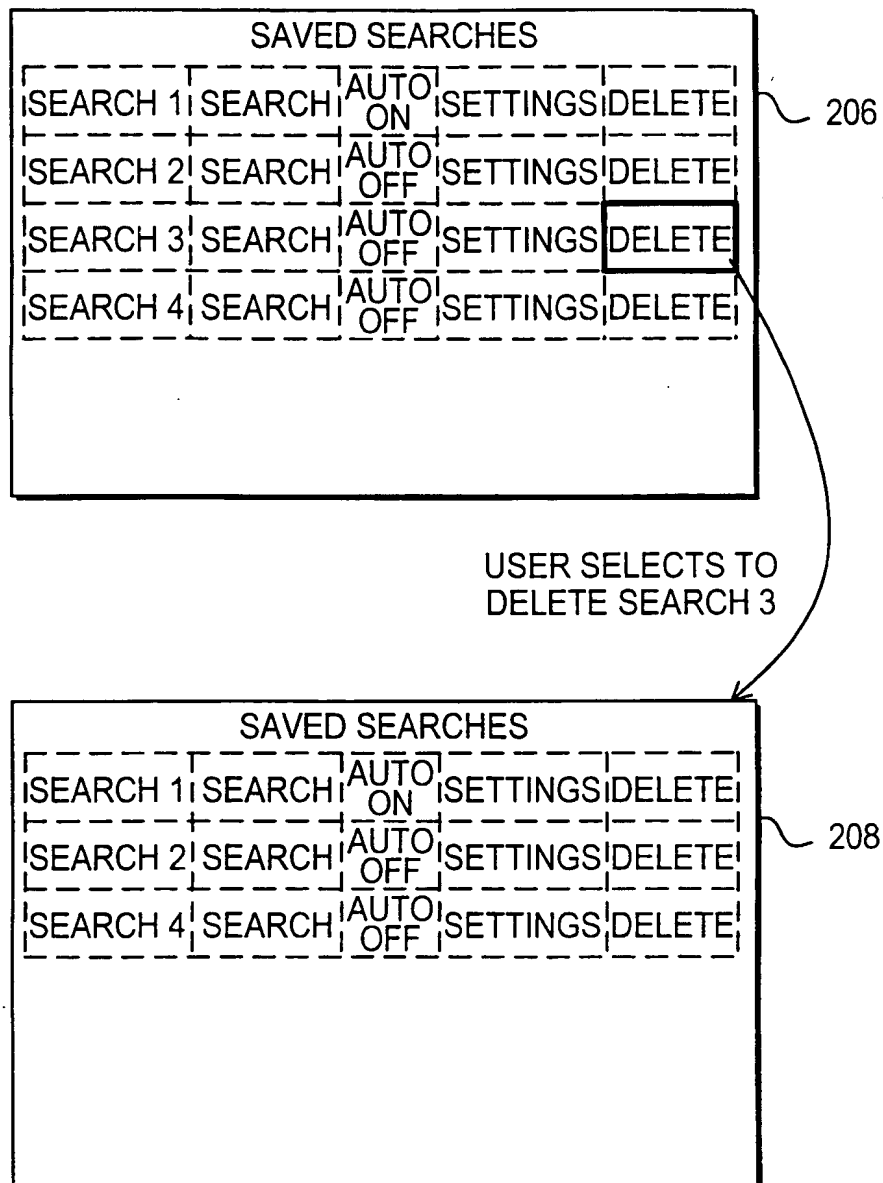


FIG. 13

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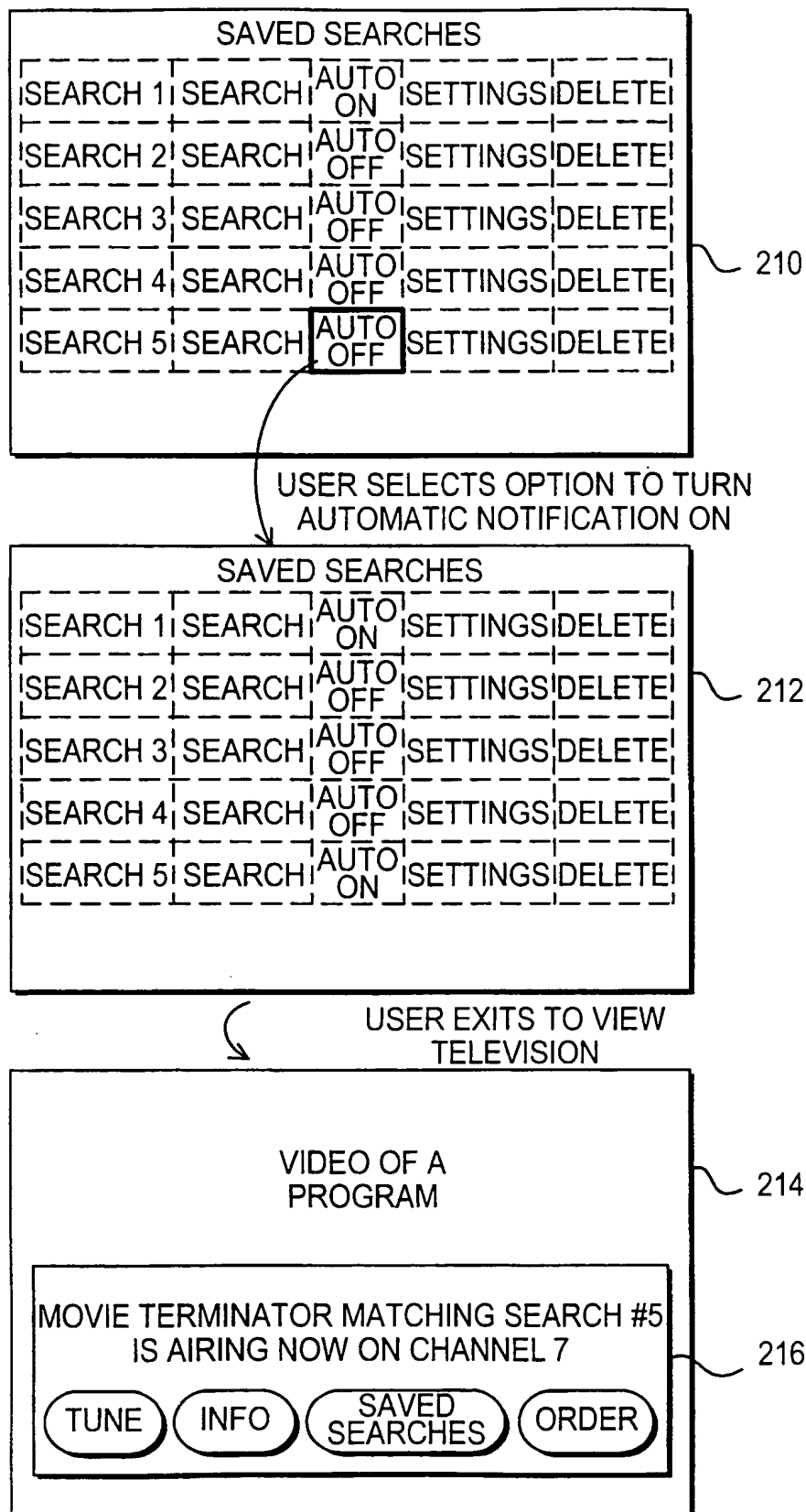


FIG. 14

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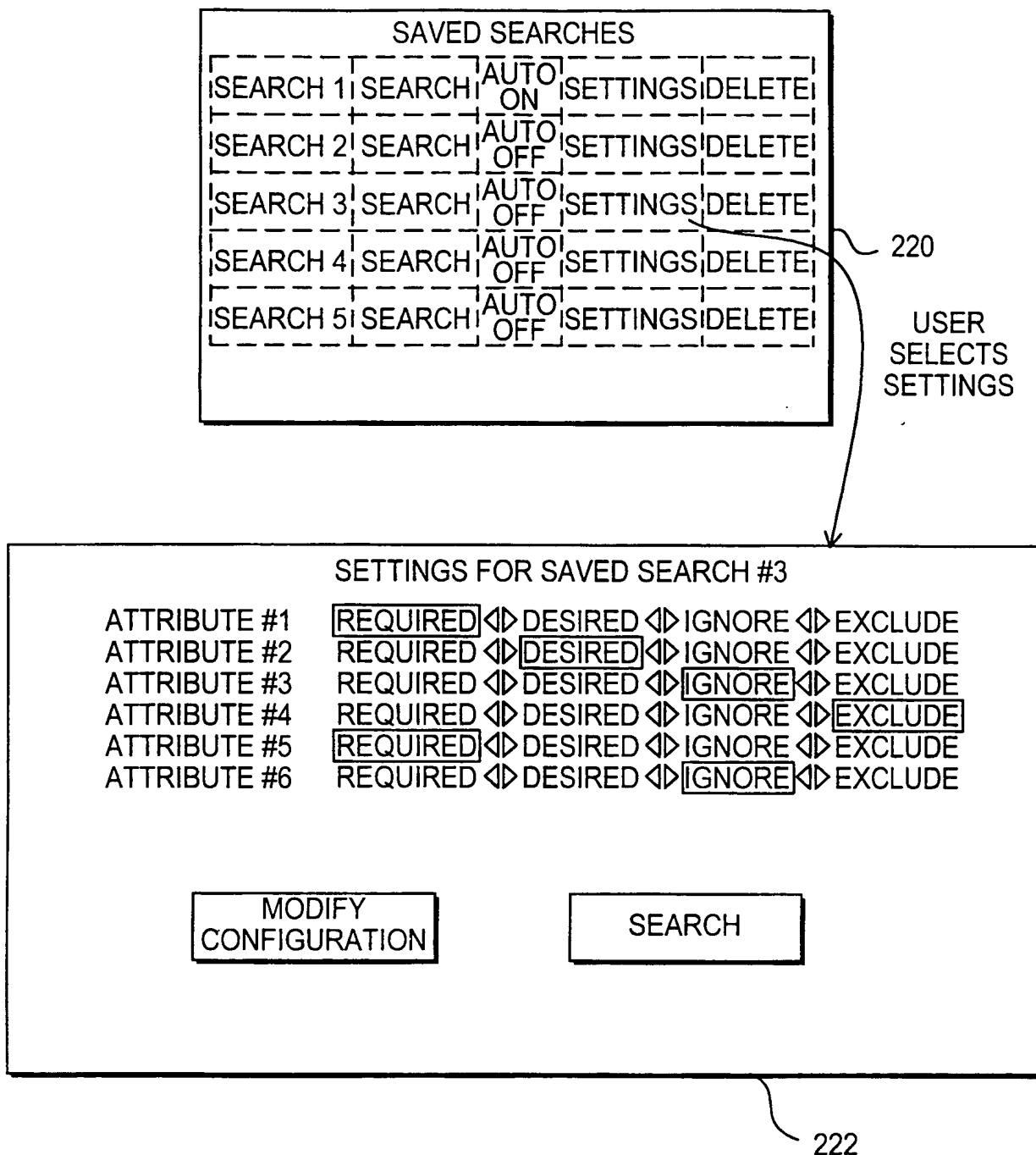


FIG. 15

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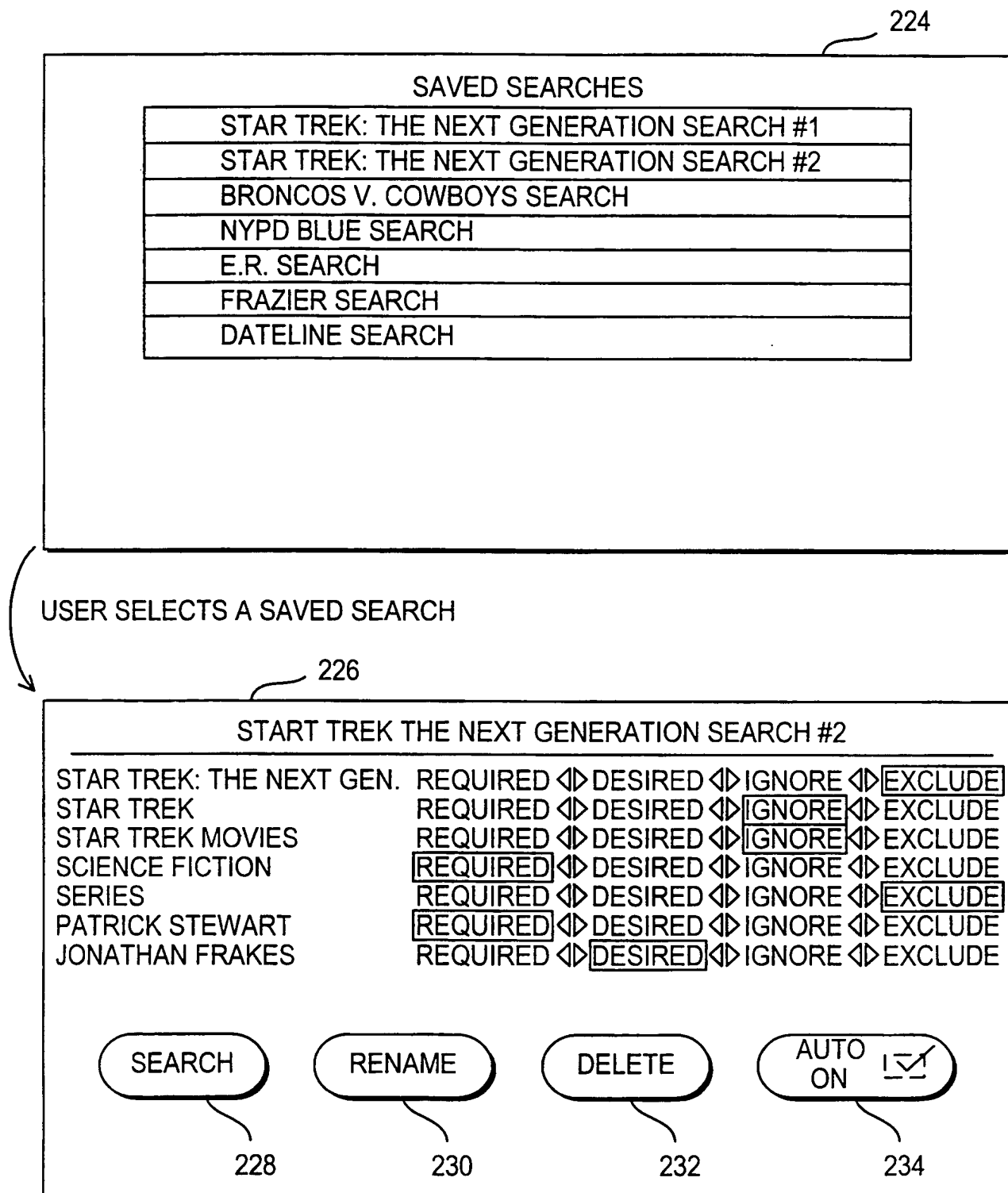


FIG. 16

PCT/US 99/28402

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 721 253 A (SONY ELECTRONICS INC) 10 July 1996 (1996-07-10)	11,18
A	column 2, line 5 -column 3, line 3	14,15, 21,22, 25,33
	column 6, line 48 -column 7, line 11; figure 4	
A	—	25,33
A	EP 0 774 866 A (THOMSON CONSUMER ELECTRONICS) 21 May 1997 (1997-05-21) column 1, line 1 - line 41 column 3, line 24 -column 5, line 27; figure 4	11,18, 25,33
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International . ication No

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